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# **SOUTH CAROLINA FORESTRY COMMISSION**



## **ANNUAL REPORT 1998-1999**

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**STATE DOCUMENTS**

# **South Carolina Forestry Commission**

## **Annual Report 1998-1999**

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# **STATE COMMISSION OF FORESTRY**

## **Members of the Commission**

G. Edward Muckenfuss, Chairman, Summerville

George E. Callaway, Vice Chairman, Manning

Joel R. Thrift, Westminster

Lawrence J. Bloomer, Easley

Sara Lee Simons, Florence

David B. Smith, Conway

Mitchell S. Scott, Allendale

J. Kenneth Hill, Fort Mill

Dr. Constantine Curris, Clemson University, Clemson

Boris Hurlbutt, Chairman Emeritus

## **Administration**

J. Hugh Ryan, State Forester and Secretary to the Commission

Wray E. Freeman, Deputy State Forester

Dean Carson, Technical Assistant to the State Forester

Judy J. Weston, Executive Assistant to the State Forester

Tim Adams, Division Director, Field Operations Support

Joe M. Richbourg, Division Director, Administration



## **MISSION**

The mission of the Forestry Commission is to protect, promote, enhance, and nurture the forest lands of South Carolina in a manner consistent with achieving the greatest good for its citizens.

The Commission will utilize Total Quality Management concepts in meeting its responsibilities.

Responsibilities extend to all forest lands, both rural and urban, and to all associated forest values and amenities including, but not limited to, timber, wildlife, water quality, air quality, soil protection, recreation, and aesthetics.

The Forestry Commission shall have general and specific responsibilities for the promulgation and enforcement of laws and regulations related to protection of the forest and its associated values.

The Commission shall be responsible for promoting and developing the appropriate technologies to accomplish its objectives, and for the development and promulgation of Best Management Practice Guidelines for South Carolina's forest land.

## **FIELD OPERATIONS SUPPORT**

The Field Operations Support Division provides operational and technical staff direction to the Forestry Commission field organization in each of the major program areas of forest management, nurseries and tree improvement, forest insects and diseases, forest fire protection, and environmental management. Additionally, it provides oversight to the equipment and communication needs of the agency including operations of the central shop.

### **FOREST MANAGEMENT**

The Forest Management Section assists South Carolina citizens with management and development of the forest resources of the state. Programs include Woodland Management Assistance, Reforestation Assistance, Forestry Services, Forest Products Utilization and Marketing Assistance, Resource Conservation and Development, Urban Forestry, and Forest Inventory. These programs assist owners in growing more timber, aid industries in more efficient utilization of the timber resource, and foster conservation and multiple use of the forest resource.

There are 12.4 million acres of commercial forestland in South Carolina. According to the 1993 U.S. Forest Service Survey, 72% of this land is owned by farmers and miscellaneous private owners. Forest industry owns approximately 19% with 9% in public ownership.

The Forest Management programs are designed to assist the non-industrial private landowner with multiple use forest management.

The Forest Management Section also has oversight responsibilities for the management of Sand Hills, Cassatt, and Manchester State Forests. Technical assistance is also provided to other state agency lands upon request.

### **FOREST MANAGEMENT ASSISTANCE**

Professional foresters from the Forestry Commission provide forest management advice and assistance to landowners. The land is examined and a written forest management plan is prepared. Recommendations for management may include such silvicultural practices as forest protection, reforestation, harvesting, prescribed burning, wildlife habitat improvement, and recreation. This year, 3,182 management plans were prepared for 171,150 acres. Where practical, the landowner is referred to consulting or industrial foresters to assist in carrying out management recommendations. This year 424 cases were referred to consulting foresters and 110 to industrial foresters.

### **COST SHARE PROGRAMS**

#### **Forest Renewal Program (FRP) - State**

In 1982 the program was funded for the first time by a \$100,000 state appropriation. This permitted an assessment of \$400,000 from forest industry, and created a \$500,000 Forest Renewal Fund. The funding was doubled effective July 1, 1996 increasing the program to \$1,000,000.

#### **Forest Incentives Program (FIP) - Federal**

FIP funding for fiscal year 1998-99 was \$496,734. South Carolina also received an additional \$180,000 to assist landowners with reforestation necessary due to natural disasters.

## **Agricultural Conservation Program (ACP) - Federal**

The Agricultural Conservation Program was not continued with the 1996 Farm Bill. The figures below refer to completion of previously obligated funds.

## **Conservation Reserve Program (CRP) - Federal**

The Program began with crop year 1986 and was renewed with the passage of the 1990 Farm Bill. Eighteen signups have been held. This year 7,208 acres were planted. The CRP program has been renewed again with the 1996 Farm Bill.

### **Statewide Accomplishments For All Cost-Share Programs**

#### **Reforestation and Timber Stand Improvement**

<b>Program</b>	<b>Number of Landowners</b>	<b>Acres Planted</b>	<b>Natural Regeneration</b>	<b>TSI Acres</b>	<b>Cost Share Payments</b>
FRP	304	16,544	198	5242	\$1,613,136
FIP	357	7,566	0	1850	\$481,400
ACP	7	252	0	0	\$8,798
CRP	188	7,208	0	0	\$253,569
SIP	41	1,935	0	0	\$110,114
<b>Totals</b>	<b>897</b>	<b>33,505</b>	<b>198</b>	<b>7,092</b>	<b>\$2,467,017</b>

## **SEEDLING SURVIVAL**

Survival checks were made on 10 percent of plantings using a row count or tenth acre plot method for determining survival. A weighted analysis involving all survival checks was used to determine the statewide survival of 78%.

# Forest Management Assistance 1998 – 1999

County	Non Cost-Share		Cost-Share		Forest Stewardship	
	Exams	Acres	Exams	Acres	Exams	Acres
Abbeville	40	2,965	47	2,088	1	172
Aiken	50	2,935	63	2,071	4	414
Allendale	8	1,275	41	2,058	4	461
Anderson	27	3,226	30	2,525	1	83
Bamberg	7	358	57	2,377	2	187
Barnwell	13	513	56	2,268	7	454
Beaufort	9	988	8	351	1	43
Berkeley	24	1,140	36	1,037	4	691
Calhoun	5	187	70	3,722	7	1,019
Upper Charleston	4	565	4	229	1	123
Lower Charleston	11	687	25	962	4	600
Cherokee	5	279	15	304	0	0
Chester	20	2,511	36	1,728	4	937
Chesterfield	16	2,666	74	2,378	3	194
Clarendon	26	896	73	1,481	2	234
Colleton	20	1,461	107	3,602	6	1,195
Darlington	24	1,887	36	1,782	2	234
Dillon	16	1,345	38	1,459	9	674
Dorchester	13	445	68	1,699	3	238
Edgefield	23	875	77	4,221	3	424
Fairfield	19	1,675	22	1,391	3	486
Florence	20	919	113	1,698	3	691
Georgetown	4	250	47	1,629	0	0
Greenville	23	955	4	154	2	237
Greenwood	31	10,096	23	772	8	1,053
Hampton	35	2,960	68	2,663	3	566
Horry	21	1,546	115	4,163	6	578
Jasper	18	1,050	24	1,493	2	269
Kershaw	11	664	39	2,679	1	136
Lancaster	19	1,058	6	182	13	2,209
Laurens	21	1,375	32	1,472	4	220
Lee	2	32	31	928	3	663
Lexington	31	1,117	63	2,232	5	291
McCormick	15	1,567	10	471	1	982
Marion	7	431	49	1,569	2	344
Marlboro	24	1,803	24	1,054	1	522
Newberry	36	1,677	69	2,422	1	67
Oconee	18	631	10	205	7	392
Orangeburg	12	629	55	2,163	4	305
Pickens	20	946	11	597	5	364
Richland	32	1,780	20	844	3	117
Saluda	5	270	67	2,893	5	419
Spartanburg	14	310	18	1,018	9	760
Sumter	8	258	33	1,432	2	76
Union	16	1,322	13	568	3	446
Williamsburg	21	1,396	212	7,796	7	2,073
York	6	229	18	986	4	526
<b>State Totals</b>	<b>850</b>	<b>64,254</b>	<b>2,157</b>	<b>83,817</b>	<b>175</b>	<b>23,079</b>



## **FOREST SERVICES**

Through this program the Commission provides assistance to landowners and other state agency lands with afforestation, reforestation, and maximization of production from their woodlands. The landowner is charged the cost of all services performed.

These services were available to landowners during the year:

**Firebreak Plowing** - performed by Forestry Commission employees using agency equipment for \$75 for the 1st hour and \$50 for each additional hour.

**Prescribed Burning** - performed by Forestry Commission employees using agency equipment for \$12 per acre for the 1st 50 acres, \$10 per acre for the 2nd 50 acres and \$8 per acre for all over 100 acres. Firebreak plowing costs are not included. Minimum fee \$100.00.

**Prescribed Burning Standby** - an agency tractor and employee on standby at burning site while landowner performed burning under an approved plan for \$45 for the 1st hour and \$20 for each additional hour. Minimum fee \$100.00.

**Equipment Rental Program** - agency owned tree planters, bedding plows and drum choppers made available to private landowners at rates from \$4 to \$15 per acre.

**Timber Marking** - performed by Forestry Commission employees at the rate of \$5 per thousand board feet and \$2.00 per cord.

<b>Service</b>	<b>Number of Tracts</b>	<b>Units of Measure</b>	<b>Receipts Received FY 98- 99</b>
Firebreak Plowing	728	1,462 miles	\$134,110
Prescribed Burning	152	10,811 acres	\$114,961
Prescribed Burning Standby	58	3,366 acres	\$9,585
Equipment Rental	57	1,237 acres	\$8,211
Water Bar Construction	18	293 bars	\$6,350
Timber Marking	17	5,375 cords	\$17,768
		1,306,506 board feet.	
<b>Totals</b>	<b>1,030</b>		<b>\$290,995</b>

## **URBAN FORESTRY**

Urban forestry seeks to improve the quality of life in populated areas by providing direct technical assistance to communities and by working through partnerships with other organizations to protect and improve the management of urban tree resources. Clean air, clean water, improved aesthetics, increased property value, noise buffering, energy conservation, and public safety are some of the products of these endeavors.

## Urban and Community Forestry Grant Program

The Urban and Community Forestry Grant Program is a national program funded by Congress through the U. S. Forest Service. South Carolina received \$150,700 in base funding to provide technical assistance and training. Pass-through grants in the amount of \$292,149 were provided to county and local governments, non-profit organizations, and educational institutions to develop long-lasting urban forestry programs in their communities.

## Partnership Development and Educational Programs

Through the technical assistance and grant funds, the urban forestry program strives to develop partnerships with a variety of organizations and units of local government. Often these partnerships result in educational programs about the benefits and importance of urban forest resources. During FY99, the Forestry Commission developed partnerships with 216 organizations and presented 74 educational sessions to 3,274 participants.

## Technical Assistance

Three full-time urban foresters provide technical assistance on a regional basis for the Piedmont, Pee Dee and Coastal regions of the state. Other Commission foresters provide urban forestry assistance in their respective areas on a time available basis. A full-time grants administrator works in the Columbia office along with the Urban Forestry Coordinator for statewide program management.

Types of Technical Assistance	Non-Grant Through Forestry Commission Technical Assistance	Grant Program Accomplishments by Grantees
Program Development/Expansion	103	NA
Project Management	37	NA
Urban Forest Cultural Practices	1,085	NA
Trees Inventoried		
Street (661 miles)	N/A	9,659
Park (451 acres)	N/A	9,521
Total Trees Inventoried(#)	N/A	19,180
Trees Planted		
Saplings(<2" caliper)	N/A	385
Street/Park (>2" caliper)		512
Total Trees Planted (#)		897
Trees Maintained(#)	N/A	1,143
Local Ordinances Passed/Revised	N/A	2
Demonstration Planting Projects	N/A	26

## Tree City USA

Sponsored by the National Arbor Day Foundation, Tree City USA is administered in South Carolina by the SC Forestry Commission. The program seeks to stimulate and promote the management of urban trees by recognizing towns and cities which meet the following criteria: (1) establishment of a city tree ordinance, (2) expenditure of at least two dollars per capita on tree care and planting, (3) a legally constituted tree board, and (4) observance of Arbor Day by a mayoral proclamation and official ceremony. South Carolina ranks 29<sup>th</sup> nationally with 27 towns recognized as Tree City USA.

## **FOREST STEWARDSHIP**

The Forest Stewardship Program is a cooperative effort between the USDA Forest Service, Forestry Commission, other natural resource agencies and organizations, forest industry, and private forest consultants in South Carolina to encourage the long-term stewardship of non-industrial private forest lands. Landowners are provided technical assistance by having a multiple-resource management plan developed for their property addressing their management objectives.

During FY 1998-99, 295 Stewardship Plans were written in South Carolina on 50,662 acres. The plans were written by the following cooperators: Forestry Commission: 175 plans; Forest Consultants: 89 plans; Forest Industry: 31 plans.

### **Stewardship Incentive Program**

Once landowners have an approved Stewardship Management Plan, they may be eligible to participate in the Stewardship Incentive Program (SIP). This is a federal cost-share assistance program to provide financial incentives to private landowners to carry out some of the management practices outlined in their Stewardship Management Plan.

Congress did not allocate any Federal funding for SIP during FY 98-99, therefore South Carolina did not receive any new funds to allocate towards this cost-share program.

## **FOREST INVENTORY AND MONITORING**

The Forest Inventory and Monitoring program is a cooperative program with the US Forest Service to collect forest inventory and forest health data from a network of permanent sample plots. There are 3840 total forest inventory plots located in South Carolina. Each year one panel (20%) of the sample plots will be measured for growth projections, damage assessments, and land use classification. The Forestry Commission will also conduct product utilization surveys to estimate product uses in South Carolina. Data analysis and reporting for this program is furnished by the US Forest Service.

The Forest Health Monitoring section of the program consists of 122 total plots in South Carolina. 33% of these plots will be measured each year during the summer for health, soil chemistry, pollution indicators and related parameters. In addition, separate bio-indicator sample plots will be surveyed to monitor the level of ozone pollution.

Currently, three full-time inventory crews are stationed throughout the state. The program coordinator is stationed in Columbia. All crew members and the program supervisor are required to maintain a minimal accuracy average of 87% for all inventory plots. US Forest Service personnel conduct quality control and quality assurance checks to monitor accuracy of the field crews.

During FY99, field crews have collected data from 498 forest inventory plots. This represents 65% of the sample locations to be collected in the first panel. Data collection for the health monitoring plots is 80% complete and will be finished for the year by mid-August.

## **MANCHESTER STATE FOREST**

Manchester State Forest, located south of Wedgefield in Sumter County is currently comprised of approximately 23,745 acres. From 1939 to 1955, Manchester was leased by the State of South Carolina from the federal government and managed by the South Carolina Forestry Commission. The State received title to the property on June 28, 1955.

## Receipts

### Receipts For Operating Budget:

Activity	Receipts
Timber Sales	\$367,376.04
Pinestraw Sales	\$14,312.38
Land Lease Payments	\$12,540.83
Wildlife Management Area Payments	\$23,424.45
Special Use Permits	\$11,421.95
<b>Total</b>	<b>\$429,075.65</b>

Note: 25% of all forest receipts paid to Sumter County - \$107,268.91

Timber sales were concentrated on thinnings in overstocked stands and conversion of older slash pine stands to longleaf plantations.

## Silvicultural Practices

Site preparation by burning and herbicide was completed on 625 acres. These areas included stands which were previously understocked and therefore clearcut. One hundred forty-eight acres of planted longleaf pine were treated with herbicide for release.

The following species and number of trees were planted:

Containerized Longleaf Pine	255,000
Improved Coastal Loblolly Pine	19,000
<b>Total Trees Planted</b>	<b>274,000</b>

A total of 617 acres were prescribed burned for site preparation, wildlife habitat enhancement, hardwood control and fuel reduction. Wet weather and smoke management concerns were the limiting factors in the completion of the proposed schedule of burning.

## Forest Protection

Seventeen wildfires occurred burning less than 150 acres with minimal damage. Firebreaks were maintained on those areas that were either high risk or of high value. New firebreaks were established on the entire Oak Lea property.

## Recreation/Education

Recreational use of the forest continues to escalate over previous years. Hunting, fishing, horseback riding, motorcycle/ATV riding, mountain biking, and use of the rifle/pistol range continue to be favorite activities. Recreational trails have been marked and brochures printed. A \$7,500 matching grant was used to improve and enhance the motorcycle/ATV riding area.

Seven special-use permits were issued for organized events with approximately 3,000 participants.



Five (5) educational programs were conducted with the assistance of the forest staff and area personnel with approximately 81 individuals involved. Of this 81, five were visitors from Central American countries. Several training sessions were also held at Manchester for SCFC personnel; including law enforcement training and technician training.

## **Wildlife Management**

Approximately 17,000 acres of the forest are presently included in the Wildlife Management Area Program through a cooperative agreement between the Department of Natural Resources (DNR), and the South Carolina Forestry Commission. DNR provided technical assistance with game food plot establishment monitoring deer herd dynamics, tracking various nongame and game species and, pond management. Law enforcement on the forest is provided through interagency cooperation with Department of Natural Resources.

Planting and maintenance was conducted on 344 acres of wildlife areas. Corn, sunflowers, sorghum, browntop millet, quail mix, wheat, rye, clover, vetch and bicolor were utilized to diversify the food supply. Several of the plantings were donated by the Department of Natural Resources and planted by Manchester and DNR personnel.

Colony sites of the red cockaded woodpecker continue to be monitored along with scouting for new cavity and start trees in cooperation with biologists from the neighboring Poinsett Gunnery Range (USAF).

## **SAND HILLS STATE FOREST**

Sand Hills State Forest (SHSF) covers approximately 46,000 acres with 45,000 acres in Chesterfield County and 1,000 acres in Darlington County. The forest was operated under a use agreement with the federal government from 1939 until 1991. In July of 1991, title to Sand Hills State Forest was transferred to the South Carolina Forestry Commission.

## **Receipts**

Since 1967, Sand Hills has been totally self-supporting. The only appropriated funds coming to Sand Hills are earmarked for the development of the H. Cooper Black Memorial Field Trial and Recreation Area.

### **Receipts For Operating Budget**

<b>Activity</b>	<b>Receipts</b>
Timber Sales	\$736,670.22
Pinestraw Sales	\$125,800.00
Land Lease Payments	\$2609.00
Wildlife Management Area Payments	\$15,616.30
Special Use Permits	\$8,401
<b>Total</b>	<b>\$889,096.52</b>

Note: 25% of all receipts are paid to Chesterfield and Darlington County School System. (F.Y. 98/99 \$222,274.13)

## Silvicultural Practices

Site preparation for planting longleaf pine by disking and V-blading was completed on 695 acres. These areas were in slash pine that had stagnated. Bareroot longleaf seedlings were planted on 989 acres on SHSF and containerized Longleaf seedlings were planted on 155 acres on Carolina Sandhills National Wildlife Refuge. Prescribed burning was done on 4,600 acres.

The following species and number of seedlings were planted:

Bareroot Longleaf Pine	560,000
Containerized Longleaf Pine	<u>85,000</u>
<b>Total</b>	<b>645,000</b>

This year Sand Hills started a pinestraw enhancement program. Under this program an individual from the general public can enter into a four-year agreement with the Forestry Commission to clear up land for pinestraw production. The individual agrees to eradicate 90% of all hardwoods on a tract of land using chemicals. In exchange that person may harvest all the pinestraw that falls during the 4 years of the agreement. After the agreement expires, the acreage becomes part of SHSF's quality straw production program. The straw from these areas is offered for sale on a lump sum sealed bid basis at three-year intervals. Currently there are nine individuals working on approximately 5,000 acres of land. The value of the pinestraw in the year 2005 will approach \$1,000,000.

## Forest Protection

No wildfires occurred on Sand Hills this year. SHSF boundary lines and the road system are maintained as firebreaks and as access in case of wildfire.

## Recreation/Education

Recreational use of the Forest continues to show rapid increase. Hunting, fishing, horseback riding, motorcycle/ATV riding, mountain biking, hiking, and camping continue to be favorite activities.

A horse-riding trail from Sugarloaf Mountain to Cheraw State Park (26 miles) named the Pine Barrens Horse Trail is complete. The Pine Barrens Wagon Trail from Sugarloaf Mountain to Cheraw State Park (24 miles) is complete except for signs. The Cooper Black Horse Trail (21 miles) is complete and being used regularly.

The Headquarters Mountain Bike Trail has been extended from 6 miles to 9 miles. This trail was built with the help of local volunteers and Boy Scouts. People from as far away as Charlotte, NC and Columbia use the trail frequently.

At Sugarloaf Mountain, there are 7 primitive camping sites for people without horses and 8 primitive camping sites for people with horses. Sand Hills personnel booked 284 reservations for these sites this year. An estimated 3,000 people with 1,000 horses used the campsites and trails.

Designated use permit sales for trail use had a tremendous increase this year. Sales increased from 271 permits in 1998 to 505 in 1999. Receipts from designated trail use permits totaled \$8,401.

Free use permits are issued for camping at Sugarloaf Mountain, raking pinestraw for personal use, and gathering firewood. Free use permits also increased this year. Last year, 217 free use permits were issued and this year, 329 were issued. Thirty-seven of the permits were for raking pinestraw for personal use, 9 for gathering firewood already on the ground, and the remainder were for camping.

In the Cooper Black Recreation area, there are 11 camping sites for RV campers. These sites have electrical hookups and water access. A dump station is complete. Also at Cooper Black is a clubhouse available for anyone to rent. A commercial kitchen has added to the usefulness of the clubhouse. A comfort station (restroom/shower

facility) is complete. Approximately 120 acres have been converted to open grassed areas for retriever field trials.

Reservations for campsites and stalls are increasing. Approximately 129 reservations for campsites and stalls were booked. Receipts from campsite and stall use totaled \$4,350.

Use of the Cooper Black Area is increasing. Twenty-three sporting dog field trials were held this year with approximately 3,000 people involved. Revenue from user fees totaled \$4,200.

A much needed brochure of Cooper Black was designed and printed this year. The brochure lists the rules and regulations for Cooper Black and features a full map of the trails on the reverse side. The brochure is available on the Forestry Commission web site.

Sand Hills' personnel conducted 5 educational programs that involved approximately 200 people. One of the programs was a teacher recertification program conducted by Bowater. Sand Hills is an annual participant in this program.

### **Wildlife Management**

Approximately 40,000 acres of the Forest is included in the Wildlife Management Area Program. This is a cooperative agreement between the S.C. Department of Natural Resources and the S.C. Forestry Commission. Department of Natural Resources personnel provide assistance with the game food plot establishment, monitoring deer herd dynamics, tracking various game and non-game species, and pond management. Law enforcement on the forest is provided through interagency cooperation. Sand Hills has a 57-acre public dove field. Thirty-five acres of this field were planted to annual crops with the remainder planted and maintained in bicolor lespedeza.

Seventy-nine acres (155 plots) were planted as wildlife food plots. These plots were planted in chufa, corn, sunflower, spring game mix, dove mix, dove proso, wild turkey mix, quail mix, sorghum, and bicolor. All plantings were fertilized and limed at the recommended rates. All manageable bicolor patches in compartments 14, 15, and 16 were bushhogged, fertilized, and limed.

A furbearer scent survey, fox squirrel survey, turkey survey, and a quail survey were conducted to track population trends.

Sixty-one established wood duck boxes were monitored, cleaned and repaired. Fifty new boxes will be added in the fall of 1999.

### **Rare, Threatened and Endangered Species Management**

There were 41 documented Red Cockaded Woodpecker (RCW) nesting attempts on SHSF this year. A total of 72 fledglings were banded. This is a significant increase from the 55 that were banded last year. Two unbanded adult birds were discovered at Sand Hills. These two birds were captured, properly banded, and released.

Four artificial RCW recruitment sites were constructed on the forest this year. A fifth recruitment site is underway. In addition to the recruitment sites, eight artificial cavity boxes have been installed and approximately 10 more will follow. Several drilled cavities will be completed along with 5 drilled starts. All new cavity trees and start trees are currently being painted and tagged. The exact location of these trees will be documented by Global Positioning System(GPS).

Hardwood understory was drum chopped for habitat management within three RCW clusters. The three clusters sites are approximately 50 acres in size.

## **Research**

A longleaf pine natural regeneration research project in conjunction with the U.S. Forest Service is still ongoing and has been in effect for 25 years.

A University of Georgia student pursuing a doctorate in biology initiated a research project to establish a baseline population of the Pine Barren Tree Frog and the Gopher Frog. The Pine Barrens Tree Frog project is part of the mitigation plan for two ponds built in the Cooper Black Area for retriever field trials.

A professor from the University of Georgia has set up a turkey litter/water quality survey on the forest. The study will last four years.

Our sludge research project is on going. A new four-year cycle was started this year. Turkey litter was added to the study site for comparison with sludge and commercial fertilizer applications and their effects on tree growth and soil chemistry.

## **STATE LANDS MANAGEMENT PROGRAM**

The State Lands Forest Management Program was created to provide professional forest management assistance to South Carolina state agencies that own timberlands. During fiscal year 1998-99, three agencies requested assistance from the state lands coordinator. The agencies and facilities were as follows:

### **Department of Natural Resources**

Treadwell Wildlife Management Area  
Manor Wildlife Management Area  
Webb Wildlife Center  
James Ross Wildlife Management Area  
Donnelley Wildlife Management Area  
Palachucola Wildlife Management Area  
Mason Wildlife Management Area  
McBee Wildlife Management Area  
McConnell's Wildlife Management Area  
Segars – McKinnon Heritage Trust

### **S.C. Department of Corrections**

Wateree Farm  
MacDougall Correctional Institute

### **S.C. Department of Transportation**

Greenville Office

## **Timber Revenue**

Six state-owned tracts were marked or cruised for timber sales and produced an estimated volume of 2.26 million board feet of sawtimber and 4,496 cords of pulpwood valued at \$802,195.00.



## **NURSERIES AND TREE IMPROVEMENT**

The South Carolina Forestry Commission operates Taylor Forest Tree Nursery (bareroot) at Trenton and Creech Containerized Greenhouse at Wedgefield for the production of seedlings for South Carolina landowners.

This year 17,954,178 seedlings were grown. The target was close to 27,000,000 but a combination of extreme weather patterns and storms early in the season destroyed nearly 9,000,000 seedlings. Demand for loblolly and longleaf was very high and we purchased 1,933,023 seedlings from various industries to help service as many customers as possible. A total of 1,694 orders were processed. North Carolina Division of Forestry received 672,000 seedlings grown for them using their seed and all other seedlings were planted in state. A total of 94,539,479 seedlings were planted on 158,301 acres in the state during the year.

The old Piedmont Nursery (now an education center), Coastal Nursery (now a seed orchard) and Tilghman Nursery (now Sumter Area Office) facilities continue to house White Pine, Virginia Pine and a hardwood genetics program. Spartanburg, Sumter and Walterboro Area Offices plus Taylor Nursery are used as seedling distribution centers.

### **CONTAINERIZED SEEDLINGS**

Specialized needs exist for seedlings other than bareroot stock. To meet these needs, a greenhouse and outdoor benches are operated at Creech Greenhouse in Wedgefield. Containerized seedlings, rooted cuttings and progeny test materials are grown at the facility. The facility gives the Commission the capacity to grow a million plus containerized seedlings annually. The greenhouse production was 838,881 for fiscal year 1998-1999.

### **RESEARCH**

The South Carolina Forestry Commission continues cooperative research projects with Clemson University, Auburn University and U.S. Forest Service. The Commission also maintains membership in the North Carolina State University Pine Tree Improvement Cooperative, the North Carolina State Hardwood Research Cooperative, and the Auburn University Southern Forest Nursery Management Cooperative.

### **FOREST TREE SEED COLLECTION PROGRAM**

Each year the South Carolina Forestry Commission collects or purchases pine cones and other forest tree seed for seedling production. During the past year, Walnut, Yellow Poplar, Texas Loblolly and Longleaf Pine seed were purchased for future seedling production. Sawtooth Oak was collected from Savannah, GA. No longleaf collections were made due to the very poor crop.

### **TREE IMPROVEMENT**

Niederhof Seed Orchard produced 3,744 bushels of second generation coastal loblolly pine and 770 bushels of second generation piedmont loblolly. The second generation coastal orchard has been rogued to twenty clones and the piedmont orchard to ten clones. Based on SCFC and North Carolina State University field tests these coastal trees produce 18% more volume/acre than unimproved and the piedmont trees produce almost 30% more volume/acre than unimproved. Both sources have demonstrated one half the rust infection of unimproved trees. This performance exceeded our expectations. Over 125 genetic field studies are being managed with five studies being measured this year. A total of 83 have been measured since 1988-89. Third cycle clones are being grafted each spring into a new breeding orchard at Niederhof Seed Orchard. Breeding will begin in another year or two. All new third cycle selections will be complete by 2003 and new third cycle orchards will be established at Niederhof.

## State Nurseries Seedling Production By Species 1998-99

### Bareroot Seedlings

Improved Coastal Loblolly Pine	7,192,000
Improved Piedmont Loblolly Pine	4,511,877
Improved Texas Loblolly	119,800
Longleaf Pine	3,751,500
Improved Virginia Pine	66,300
Improved White Pine (2-0)	75,050
Baldcypress	59,925
Red Cedar	79,075
Yellow Poplar	7,700
Improved Sweetgum	1,700
Improved Sycamore	30,500
Black Walnut	11,500
Attaway Lespedeza	1,172,100
Sawtooth Oak	37,070
Miscellaneous	0
<b>Total</b>	<b>17,116,097</b>

White Pine (1-0) Not For Sale	100,000
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### Containerized Seedlings (Creech Greenhouse)

Improved Piedmont Loblolly Pine	-0-
Improved Coastal Loblolly Pine	-0-
Improved Virginia Pine	6,315
Improved Longleaf Pine	710,695
Leyland Cypress	87,044
Carolina Sapphire	6,732
Clemson Greenspire	5,238
Wiregrass	22,857
<b>Total</b>	<b>838,881</b>

<b>Grand Total</b>	<b>17,954,978</b>
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### Tree Seedling Distribution By Landowner Classification

Land Ownership	Percent of Total	Number of Trees Planted
Private Ownership	60	56,337,950
Christmas Tree Growers	<1	55,000
Forest Industry (Pulp & Paper)	27	25,741,386
Lumber	2	1,665,368
Forest Industry (Other Corp.)	8	7,857,900
Schools	<1	50,000
State Forest	1	934,000
Other State Land	<1	45,000
Other Government Land	<1	831,725
Federal Land	1	971,150
Associations/Clubs	<1	50,000
<b>Total</b>	<b>100</b>	<b>94,539,479</b>

### Source of Seedlings Planted in the State:

#### 1. Nurseries in South Carolina

South Carolina Forestry Commission (Includes Greenhouse)	17,954,978
Champion International	7,928,194
International Paper Company	34,333,950
Westvaco	14,886,328
Weyerhaeuser	11,005,000
<b>Total</b>	<b>86,108,450</b>

#### 2. Nurseries Outside of South Carolina

Georgia Forestry Commission	1,203,150
International Paper (Lattay)	2,909,950
Union Camp	1,891,000
International Forest Company	2,404,500
Weyerhaeuser (North Carolina)	4,000
Kimberly Clark	18,429
L & R Orchards (Georgia)	182,000
<b>Total</b>	<b>8,613,029</b>

**Total Seedlings and Acres Planted In South Carolina  
1929-1999 by County**

<b>County</b>	<b>Seedlings Planted 1998-99</b>	<b>Grand Total Planted To Date 1929-99</b>	<b>Acres Planted 1929 - 6/30/99</b>
Abbeville	429,255	13,062,739	21,771
Aiken	4,054,904	245,649,194	409,415
Allendale	720,980	12,861,498	21,435
Anderson	874,026	53,569,220	89,282
Bamberg	1,261,972	70,020,060	116,700
Barnwell	1,212,522	35,152,239	58,587
Beaufort	302,164	28,484,866	47,474
Berkeley	1,925,030	134,965,352	224,942
Calhoun	578,742	50,112,499	83,520
Charleston	1,123,951	54,670,785	91,118
Cherokee	193,500	34,485,728	57,462
Chester	544,337	85,948,965	143,248
Chesterfield	1,994,472	149,936,980	249,894
Clarendon	2,098,887	73,901,109	123,168
Colleton	2,959,544	142,470,844	237,451
Darlington	284,399	39,509,763	65,849
Dillon	697,381	34,951,702	58,252
Dorchester	1,767,298	89,670,268	149,450
Edgefield	1,004,684	89,815,003	149,692
Fairfield	1,925,475	117,852,438	196,421
Florence	1,162,403	38,551,712	64,253
Georgetown	3,327,517	152,495,384	254,159
Greenville	27,326	31,177,063	51,962
Greenwood	1,692,976	96,385,159	160,642
Hampton	4,053,378	118,336,076	197,227
Horry	1,863,398	82,091,926	136,820
Jasper	2,198,128	104,365,826	173,943
Kershaw	955,137	191,740,735	319,568
Lancaster	255,259	82,511,874	137,520
Laurens	1,398,154	105,617,526	176,029
Lee	414,204	37,434,000	62,390
Lexington	1,454,679	73,693,680	122,823
Marion	1,158,975	44,327,889	73,880
Marlboro	1,449,188	62,753,328	104,589
McCormick	47,299	54,756,813	91,261
Newberry	1,178,697	97,891,980	163,153
Oconee	357,363	39,679,613	66,133
Orangeburg	2,222,309	151,750,847	252,918
Pickens	256,402	30,069,576	50,116
Richland	1,598,101	71,614,452	119,357
Saluda	1,271,597	73,084,214	121,807
Spartanburg	202,086	63,802,691	106,338
Sumter	1,174,377	74,043,641	123,406
Union	655,862	79,037,385	131,729
Williamsburg	3,477,842	119,014,636	198,358
York	506,950	67,047,390	111,746
Multiple Counties	34,226,349	564,262,503	940,438
<b>Total</b>	<b>94,541,378</b>	<b>4,264,629,171</b>	<b>7,107,696</b>



# SCFC ACTIVE SEED ORCHARDS

Orchard Type	Year Established	Acres
<b>Creech Greenhouse/Seed Orchard</b>		
Genetic Diversity Archives (clone banks)	1977-83	25
Coastal Loblolly Pine 1.0 Rust Resistant	1971	5
Longleaf Pine 1.0	1971	12
Virginia Pine 1.0 (Creech)	1980	1
Virginia Pine 1.0 (Manchester SF)	1986	2
Sawtooth Oak 1.0 Seedling	1990	2
<b>Total</b>		<b>47</b>
<b>Niederhof Seed Orchard</b>		
Coastal Loblolly Pine 2.0	1985-88	204
Piedmont Loblolly Pine 2.0	1985-88	118
Longleaf Pine 1.0	1988-90	30
Loblolly Pine Breeding Orchard 3.0	1997	2
Longleaf Pine Seedling Seed Orchard	1998	8
"Gobbler" Sawtooth Oak Seedling S.O.	1998	1
<b>Total</b>		<b>363</b>
<b>Coastal Seed Orchard</b>		
Sycamore 2.0	1992-95	4
Sweetgum 2.0	1992-95	6
Willow Oak Seedling Seed Orchard	1992-95	1
Swamp Chestnut Oak Seedling S.O.	1992-95	1
Green Ash Seedling Seed Orchard	1992-95	3
Red Maple Seedling Seed Orchard	1992-95	1
Southern Red Oak Seedling Seed Orchard	1992-95	2
White Oak Seedling Seed Orchard	1992-95	2
<b>Total</b>		<b>20</b>
<b>Piedmont Seed Orchard</b>		
White Pine 1.5	1991-93	12
Virginia Pine 1.0	1993	3
Northern Red Oak Seedling Seed Orchard	1993-95	2
<b>Total</b>		<b>17</b>
<b>Grand Total</b>		<b>447</b>

### Seedling Distribution 1927-1999

Year	Total State Nurseries	Total All Sources	Year	Total State Nurseries	Total All Sources
1928-29	142,000	142,000	1964-65	49,009,893	60,683,493
1929-30	148,000	148,000	1965-66	42,310,685	56,529,185
1930-31	986,000	986,000	1966-67	48,575,190	69,597,590
1931-32	976,000	976,000	1967-68	39,970,136	58,812,136
1932-33	996,000	996,000	1968-69	29,529,285	51,453,285
1933-34	1,031,000	1,031,000	1969-70	31,415,430	49,202,630
1934-35	7,529,000	7,529,000	1970-71	31,939,880	54,540,880
1935-36	23,000,000	23,000,000	1971-72	23,677,925	41,357,225
1936-37	22,000,000	22,000,000	1972-73	30,977,800	45,239,100
1937-38	11,192,000	11,192,000	1973-74	28,443,000	42,305,500
1938-39	10,854,000	10,854,000	1974-75	40,081,500	55,996,500
1939-40	12,244,000	12,244,000	1975-76	40,664,387	59,063,387
1940-41	21,165,423	21,165,423	1976-77	39,795,375	59,238,275
1941-42	10,275,037	10,275,037	1977-78	45,734,500	64,380,200
1942-43	4,742,010	4,742,010	1978-79	43,009,533	65,936,933
1943-44	5,662,608	5,662,608	1979-80	46,374,919	76,206,619
1944-45	1,962,600	1,962,600	1980-81	53,512,622	86,419,513
1945-46	6,402,255	6,402,255	1981-82	55,727,828	87,793,028
1946-47	1,962,600	1,962,600	1982-83	47,798,858	86,265,299
1947-48	11,356,990	11,356,990	1983-84	50,169,612	100,394,312
1948-49	30,388,775	30,338,775	1984-85	51,635,770	107,717,581
1949-50	29,501,955	29,501,955	1985-86	65,464,810	124,381,360
1950-51	20,615,315	20,615,315	1986-87	73,554,964	1,5752,2970
1951-52	16,619,000	19,619,000	1987-88	7,8787,967	164,094,827
1952-53	22,035,850	32,246,298	1988-89	55,051,595	153,450,416
1953-54	36,210,100	42,852,314	1989-90	38,355,557	128,475,489
1954-55	35,373,025	45,182,255	1990-91	29,297,000	102,384,439
1955-56	34,413,550	42,931,755	1991-92	31,983,779	94,7105,82
1956-57	55,753,600	69,658,736	1992-93	22,665,397	84,287,351
1957-58	60,846,200	93,369,084	1993-94	23,286,422	119,310,888
1958-59	123,985,000	166,351,000	1994-95	16,153,974	90,333,823
1959-60	147,146,365	187,516,418	1995-96	16,841,263	99,549,491
1960-61	145,609,075	158,330,575	1996-97	16,058,174	99,438,594
1961-62	71,892,420	83,844,470	1997-98	23,278,341	97,962,833
1962-63	56,191,241	64,201,541	1998-99	17,954,978	94,539,479
1963-64	51,445,597	62,423,597			

Total State Nurseries: 2,471,692,940

Total All Sources: 4,199,422,429

# Forest Tree Seedling Sales, Distribution by Species, By County, Fiscal 99

	Coastal Loblolly	Piedmont Loblolly	Longleaf	Misc	Lespedeza	Texas Loblolly	White Pine (2 0)	Virginia Pine	Red Cedar	Bald- cypress	Leyland Cypress	Sawtooth Oak	Sycamore	Yellow Poplar	Wire Grass	Black Walnut	Carolina Sapphire	Clemson Greenspire	Grand Total
Abbeville		426,083		0	1,000	0	500	1,000	0	200	54	200	0	100	0	100	18	0	429,255
Aiken	3,049,080	236,500	646,285	0	15,000	91,900	1,100	2,900	2,300	3,100	1,062	2,400	0	0	3,615	100	90	72	4,034,904
Allendale	215,500		25,900	475,800	0	0	0	0	2,500	0	180	700	1,200	0	0	100	0	0	720,980
Anderson	585,500	274,358		0	2,000	0	2,000	1,200	2,800	0	3,798	200	500	300	0	1,100	216	54	874,026
Bamberg	1,189,671		42,000	0	28,000	0	500	0	100	0	576	1,000	0	0	0	0	18	18	1,261,972
Barnwell	1,092,200	7,000	71,075	3,200	28,000	1,000	1,500	500	2,600	2,100	486	1,225	1,500	0	0	100	18	18	1,212,522
Beaufort	286,000		540	500	9,000		0	0	0	500	234	0	0	0	3,790	1,600	0	0	302,164
Berkley	1,758,575		44,535	70,969	27,000	0	100	3,600	200	200	252	800	100	18,429	0	0	180	90	1,925,030
Calhoun	567,000			100	4,000	0	500	600	3,600	1,000	1,134	600	0	0	0	100	36	72	578,742
Charleston	872,736		139,585	90,924	13,000	0	500	3,000	1,300	200	216	1,600	500	100	90	200	0	0	1,123,951
Cherokee		190,655	90	0	0	0	100	645	0	0	810	700	500	0	0	0	0	0	193,500
Chester		540,022	45	0	1,000	0	500	600	500	100	1,080	200	0	0	0	200	72	18	544,337
Chesterfield	1,145,734	9,000	814,135	0	14,000	0	1,000	690	3,000	0	738	200	0	100	5,085	600	64	126	1,994,472
Clarendon	1,970,466		74,810	0	50,000	0	1,000	145	600	100	522	900	100	100	0	0	144	0	2,098,887
Colleton	2,738,625		87,985	113,594	7,000	11,000	0	0	200	500	360	100	0	0	0	0	180	0	2,959,544
Darlington	191,900		65,845	0	22,000	0	100	360	1,200	0	1,980	500	0	0	0	100	378	36	284,399
Dillon	687,980			0	6,000	0	500	45	1,100	500	720	500	0	0	0	0	18	18	697,381
Dorchester	1,697,448		22,995	41,249	0	0	0	3,600	700	0	990	100	0	0	0	0	216	0	1,767,298
Edgefield	678,389	308,000	1,315	500	8,000	500	1,100	90	2,000	600	972	800	500	500	0	500	540	378	1,004,684
Fairfield		1,919,563	90	0	2,000	0	500	450	0	100	720	1,700	100	0	0	0	126	126	1,925,475
Florence	1,123,585		22,605	0	2,000	0	500	2,545	2,500	1,700	1,332	1,800	1,100	2,600	0	100	18	18	1,162,403
Georgetown	2,975,192		12,000	338,989	0	1,100	0	100	0	0	0	0	100	0	0	0	36	0	3,327,517
Greenville	1,000	5,000	0	0	4,000	0	6,400	2,990	4,100	0	1,674	1,000	0	0	0	1,000	108	54	27,326
Greenwood	500	1,682,500	0	0	6,000	0	1,200	1,100	700	100	504	300	0	0	0	0	54	18	1,692,976
Hampton	3,877,446	0	108,680	33,000	27,000	0	0	600	4,100	1,600	216	400	100	100	0	100	36	0	4,053,378
Horry	1,782,400	0	6,725	0	48,000	7,800	2,500	2,770	100	2,000	1,260	100	8,500	500	45	500	108	90	1,863,398
Jasper	2,116,178	0	17,500	30,700	30,000	0	1,000	2,100	0	0	270	200	0	0	0	0	90	90	2,198,128
Kershaw	205,500	478,880	254,365	0	7,000	0	700	4,145	1,800	200	810	200	400	600	45	300	144	108	955,137
Lancaster	0	252,400	0	0	1,000	0	600	45	100	0	324	700	0	0	0	0	90	0	255,259
Laurens	0	1,375,736	9,135	0	8,000	0	1,500	1,145	500	100	738	1,300	0	0	0	0	0	0	1,398,154
Lee	345,784	0	38,500	0	19,000	0	500	3,000	500	2,000	720	3,100	100	0	0	1,000	0	0	414,204
Lexington	773,500	398,750	256,540	0	10,100	1,500	2,600	1,825	4,200	700	3,150	200	500	0	0	700	162	252	1,454,679
Marion	1,152,330	6,000	0	0	0	0	100	45	500	0	0	0	0	0	0	0	0	0	1,158,975
Marlboro	1,436,138	0	13,005	0	0	0	0	45	0	0	0	0	0	0	0	0	0	0	1,449,188
McCormick	0	42,000	0	0	1,000	500	500	2,100	0	1,000	18	100	0	0	45	0	18	18	47,299
Newberry	1,000	1,096,709	76,500	0	3,000	0	0	0	0	100	972	200	0	0	0	0	144	72	1,178,697
Oconee	24,000	319,020	0	0	6,000	500	0	690	1,600	0	918	0	3,500	0	315	100	450	270	357,363
Orangeburg	1,826,167	0	181,800	61,302	134,000	2,500	1,100	100	4,300	2,100	1,080	6,400	1,100	1,200	0	700	90	90	2,222,309
Pickens	0	230,280	6,725	200	0	0	10,500	835	3,100	1,800	630	300	500	500	0	600	252	180	256,402
Richland	1,411,905	0	154,545	0	14,000	1,000	700	3,535	2,900	3,700	1,404	2,745	500	0	315	600	126	126	1,598,101
Saluda	2,000	1,260,356	545	0	3,500	500	600	1,590	500	500	414	200	100	0	0	0	414	378	1,271,597
Spartanburg	500	176,000	500	0	8,000	0	7,800	3,800	600	500	2,592	600	500	100	180	0	180	234	202,083
Sumter	626,932	5,000	521,715	0	9,000	0	250	1,700	1,000	4,700	1,836	1,900	1,000	0	0	200	72	72	1,174,377
Union	500	645,551	135	0	9,000	0	0	0	0	0	540	100	0	0	0	0	18	18	655,862
Williamsburg	3,288,078	0	27,695	121,817	38,000	0	0	0	500	500	252	500	500	0	0	0	0	0	3,477,842
York	0	481,784	0	100	14,000	0	700	2,390	600	500	4,788	300	300	300	0	0	1,080	108	506,950
Multiple Counties	20,113,513	12,320,500	1,086,645	0	533,500	0	33,400	23,095	20,175	46,075	23,070	3,000	7,900	1,100	9,932	800	728	2,016	34,226,349
Grand Total	61,810,951	24,687,647	4,829,500	1,382,944	1,172,100	119,800	84,650	82,615	79,075	79,075	66,396	40,070	31,700	26,629	22,857	11,500	6,732	5,238	94,539,479



## **FIRE MANAGEMENT**

*Area protected: 12,807,924 acres. Acres protected is based on 1993 Forest Survey data for non-federal forest land, plus 10% to cover adjacent non-forest land. Also included is 101,320 acres of federal land protected under special contract. Mutual aid is provided on 802,147 acres of additional federal land.*

### **WILDFIRE SUMMARY**

Agency firefighters recorded 6,615 wildfires during the fiscal year. These fires burned a total of 35,155 acres of forest and grassland. Only 5 wildfires statewide exceeded 200 acres in size; the largest was a 480-acre blaze on Daufuskie Island.

### **FIRE PROTECTION COOPERATIVES**

The Forestry Commission has cooperative arrangements with 11 fire and emergency management entities. Activities for each cooperative during FY 1998-99 are as follows:

**Southeastern States Forest Fire Compact Commission:** Formed in 1954, the Compact allows member states to provide and receive mutual aid in fighting wildland fires. Member states include: Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, and West Virginia.

SCFC provided firefighting assistance under the Compact to the State of Florida for a 41-day period including parts of FY 98 and FY 99; details appear in the 1998 Annual Report. The SE Compact also provided assistance to the State of Texas as an inter-compact service. A total of 32 SCFC firefighters and 6 tractors provided a total of 481 man-days of assistance in Texas between June 31, 1998 and August 26, 1998.

South Carolina activated the Compact during the period July 20-22, 1998, requesting helibucket assistance on a fire on Table Rock Mountain. The North Carolina Forest Service responded.

**SC Division of Emergency Preparedness:** There were no emergency activations involving SCFC during the year. Staff foresters participated in several EPD emergency response training sessions.

**SC Army National Guard:** Under a new agreement with the National Guard, helicopter firefighting support became available upon request from SCFC. Requests from SCFC will be channeled through EPD and the Governor's Office to activate the Guard.

The Guard's primary firefighting mission will be providing helibucket service to SCFC Incident Commanders. SCFC purchased a 750 gallon Bambi bucket for this purpose and trained Guard helicopter crews in its use. Fifteen SCFC firefighters were trained to serve as on-board drop coordinators for helibucket missions.

**Rural Cooperative Fire Protection Program:** Federal funds for this program have decreased significantly over the past few years. During the year, 58 fire departments were approved for matching-fund grants totaling \$28,000.

**Federal Excess Property Program:** Two hundred and thirty-nine pieces of federal excess equipment were loaned to fire departments during the year. At present, 983 pieces of equipment are assigned to 375 departments statewide.

**National Weather Service:** NWS provides daily fire weather forecasts and atmospheric dispersion information. During the year, SCFC and NWS worked to improve content and timing of daily forecasts.



**USDA Forest Service:** Under the terms of a 1996 contract, SCFC provides aerial wildfire detection on 611,407 acres of National Forest land and 198,000 of Savannah River Site land in SC. A mutual aid agreement between the US Forest Service and SCFC allows both parties to provide initial attack firefighting within one-quarter mile of National Forest boundaries.

SCFC provided initial attack on a number of fires on the Francis Marion National Forest during the spring fire season, and SCFC investigators assisted with wildfire investigation and stake-outs.

**DOD Corps of Engineers:** Beginning in 1997, SCFC has provided all fire suppression services on 55,320 acres of Corps of Engineers land. Under the terms of the agreement, actual fire suppression costs are reimbursed to the SCFC. During the year, SCFC suppressed 8 fires on Corps of Engineers land. The largest of these was 6 acres.

**USDI Fish and Wildlife Service:** Under the terms of a 1992 land acquisition agreement, SCFC provides initial attack fire suppression on the 46,000 acre Carolina Sandhills National Wildlife Refuge. The agreement terminates in 2042. SCFC maintains mutual aid firefighting agreements with the following National Wildlife Refuges: Ace Basin, Cape Romain, Savannah, Pinckney Island, and Santee.

**USDI Park Service:** Agreement maintained; no reportable activity.

**Wildland Fire Protection Partnership:** Organized in 1991, the Partnership seeks solutions to wildfire management problems in the wildland-urban interface. Membership includes the SC Forestry Commission, US Forest Service, SC Firemen's Association, Department of Health and Environmental Control, SC Division of Emergency Preparedness, SC Fire Marshal, SC Fire Academy, and SC Forestry Association (ex officio).

During the year, the Partnership prepared legislation that would allow private industry and public agencies to donate un-needed firefighting equipment for use by other firefighting entities. The Forestry Commission would serve as the donation point and manage the distribution of donated equipment. The bill will be introduced during the 2000 legislative session.

## **FIRE WEATHER**

**Weather Stations.** The Forestry Commission, USDA Forest Service, National Park Service, Department of Defense (Ft. Jackson), and USDI Fish and Wildlife Service share a network of 13 Automated Weather Stations across the state. Data from these stations are used in daily calculations for the National Fire Danger Rating System. Weather readings from these stations are available 24 hours a day for wildfire and prescribed fire management purposes.

### **Inches Precipitation: FY 99\***

<b>Month</b>	<b>Precipitation</b>
July 98	4.46
August	3.88
September	5.69
October	1.68
November	1.52
December	3.70
January 99	5.24
February	2.73
March	2.64
April	3.94
May	2.42
June	4.93
<b>Total</b>	<b>42.83</b>

\*measured by NOAA and SC Climatology Office, averaged for state

### Precipitation Last 5 Years\*

Fiscal Year	Precipitation Inches	Departure from Normal
1994-95	57.29	+6.62
1995-96	47.72	-2.95
1996-97	50.62	-0.05
1997-98	62.62	+11.95
1998-99	42.83	-7.84
<b>Normal Precipitation</b>		<b>50.67*</b>

\*measured by NOAA and SC Climatology Office, averaged for state

**Readiness Plan.** The daily readiness level of Forestry Commission firefighters is based on fire danger data, available number of firefighters, and status of firefighting equipment. Average statewide readiness levels for FY 99 are as follows:

Readiness 1 (No wildfire danger)	14 days
Readiness 2 (Low wildfire danger)	155 days
Readiness 3 (Moderate wildfire danger)	142 days
Readiness 4 (High wildfire danger)	43 days
Readiness 5 (Extreme wildfire danger)	11 days

**Burning Ban and Red Flag Fire Alert.** A statewide Red Flag Fire Alert issued on June 25, 1998, was still in effect at the beginning of the fiscal year. The Alert was upgraded to a State Forester's Burning Ban for the period July 1-13. Following the removal of the Ban, a Red Flag remained in effect in portions of the state through July 28.

On September 18, 1998, a Red Flag was declared for three upstate counties. It remained in effect until September 21. Fourteen counties in the Pee Dee Region were under a Red Flag from October 27 through November 4, 1998. A Red Flag was in effect for 11 eastern South Carolina counties December 4-14, 1998.

On March 1, 1999, a Red Flag was declared in all counties. This Alert was lifted in the upstate on March 5, and in the remainder of the state on March 9. A Red Flag affecting all but three counties was declared on April 17, 1999; it was lifted in the Pee Dee and Coastal Regions on April 26, and in the Piedmont on April 28.

### DISPATCH AND AIR OPERATIONS

**Dispatch.** Forestry Commission dispatch is by closest available resource, regardless of political or administrative boundaries. Dispatching was handled by Region Dispatch Centers located in Walterboro, Florence, and Newberry.

**Air Operations.** Eight Forestry Commission pilots equipped with Federal Excess planes provided both fire detection and incident reconnaissance. Private aerial contractors trained in wildfire detection supplemented the agency's resources when needed.

### LAW ENFORCEMENT

The Forestry Commission has 62 commissioned law enforcement officers, all certified by the Criminal Justice Academy. During the year, investigators placed strong emphasis on investigation of timber theft and fraud. Public demand for these services continues to grow.



## **FIRE TRAINING**

The following fire training was provided during the year: Basic Firefighting School (SCFC), Basic Firefighting School for Cooperators (SCFC), Introduction to Fire Behavior (S-190), Intermediate Fire Behavior (S-290), Fire Behavior Calculations (S-390), Prescribed Burning School (SCFC). New contract pilots were provided training in SCFC aerial detection procedures.

## **FIRE PREVENTION/FIRE INFORMATION**

During the year, Fire Management produced 36 news releases and provided 202 media interviews.

In addition, the Fire Management Staff produced 17 art/graphic pieces to support SCFC programs; participated with USFS in a Smokey promotion for the Capitol City Bombers; wrote scripts and narrated 2 interagency video productions; and prepared brief illustrated history of SCFC for internet.

### **Fires By Cause**

Cause	Number	Acres Burned	Average Acres per Fire	Percent of Total FY 99
Lightning	97	1,193.6	12.3	2
Campfire	47	498.0	10.6	1
Smoking	170	546.9	3.2	3
Debris Burning	2,975	14,915.2	5.0	44
Incendiary	2,148	14,357.2	6.7	32
Equipment	345	1,185.4	3.4	5
Railroad	47	175.8	3.7	1
Children	324	681.3	2.1	5
Miscellaneous	462	1,602.3	3.5	7
<b>TOTALS</b>	<b>6,615</b>	<b>35,155.5</b>	<b>5.3</b>	<b>100</b>

### **Five-Year Summary: All Fires**

Fiscal Yr.	Acres Protected	# Fires	Acres Burned	Av.Acres/Fire	% Area Burned
1994-95	12,706,604	3,377	16,524.5	4.9	0.13
1995-96	12,707,604	4,341	27,112.1	6.2	0.21
1996-97	12,807,924	3,204	21,730.7	6.8	0.17
1997-98	12,807,924	1,943	10,425.1	5.4	0.08
1998-99	12,807,924	6,615	35,155.5	5.3	0.20
<b>Five Year Averages</b>		<b>3,896</b>	<b>22,189.6</b>	<b>5.7</b>	<b>0.16</b>

## **PRESCRIBED FIRE**

**Certified Prescribed Fire Manager Program.** Four Certified Prescribed Fire Manager Schools were conducted during the year. Interest in this program continues to be high.

### **Prescribed Burning for Forestry, Wildlife, and Agriculture**

Region	Forest Understory		Forestry Site Prep		Wildlife		Agriculture	
	Number	Acres	Number	Acres	Number	Acres	Number	Acres
Coastal	3,009	194,440	3,090	11,936	517	56,231	4,255	72,128
Pee Dee	1,887	76,130	2,237	10,671	428	27,636	4,001	74,202
Piedmont	328	34,586	318	9,952	62	5,354	612	6,833
<b>Totals</b>	<b>5,224</b>	<b>305,156</b>	<b>5,645</b>	<b>32,559</b>	<b>1,007</b>	<b>89,221</b>	<b>8,968</b>	<b>153,163</b>

Grand Total Burning Under Smoke Management Guidelines: 20,744 fires; 580,099 acres

## Acres Protected and Total Burning Notifications by County

<u>County</u>	<u>Acres Protected</u>	<u>Dispatch Cntr. Notifications</u>	<u>Voice Mail Yard Debris</u>
Abbeville	202,645	717	2,112
Aiken	455,540	1,508	10,467
Allendale	178,794	545	842
Anderson	214,724	2,279	10,644
Bamberg	182,062	507	1,038
Barnwell	147,093	675	2,800
Beaufort	136,739	1,556	5,779
Berkeley	390,299	2,044	14,212
Calhoun	168,997	507	1,981
Charleston	244,835	1,542	7,769
Cherokee	165,386	649	3,177
Chester	307,154	588	2,664
Chesterfield	350,594	1,023	5,785
Clarendon	241,314	1,095	3,085
Colleton	502,776	1,828	12,298
Darlington	206,641	682	4,468
Dillon	158,914	448	3,441
Dorchester	283,205	1,177	11,053
Edgefield	238,766	779	2,345
Fairfield	409,985	461	1,730
Florence	322,779	1,576	7,857
Georgetown	417,150	1,407	7,356
Greenville	271,893	2,678	15,753
Greenwood	212,203	669	3,273
Hampton	279,511	1,236	4,381
Horry	492,064	3,038	16,995
Jasper	329,574	1,234	3,470
Kershaw	413,527	721	11,325
Lancaster	289,284	581	3,092
Laurens	325,714	685	3,943
Lee	149,375	378	908
Lexington	280,985	2,479	35,513
Marion	203,906	507	7,786
Marlboro	140,099	452	4,521
McCormick	239,275	305	809
Newberry	254,485	611	1,841
Oconee	226,058	1,538	6,900
Orangeburg	438,154	2,094	5,653
Pickens	233,056	1,566	6,202
Richland	280,398	2,158	6,069
Saluda	203,906	466	1,024
Spartanburg	289,043	2,356	6,697
Sumter	258,685	1,058	7,977
Union	229,078	261	325
Williamsburg	450,241	1,442	3,327
York	290,432	1,602	9,277
<u>Federal Land</u>	<u>101,320</u>	<u>      </u>	<u>      </u>
<b>Totals</b>		<b>53,708</b>	<b>289,963</b>

Grand Total All Notifications Received: 343,671



### Total All Land Fires by County and Cause, Fiscal Year 1999

County	Lightning		Campfire		Smoking		Debris Burning		Incendiary		Equipment Use		Railroad		Children		Miscellaneous		Total No.	Total Acres
	No.	Acres	No.	Acres	No.	Acres	No.	Acres	No.	Acres	No.	Acres	No.	Acres	No.	Acres	No.	Acres		
Abbeville County	1	0.1	1	0.0	1	2.0	17	38.5	5	3.8	6	27.1	3	7.0	4	6.7	5	7.0	43	92.2
Aiken County	8	57.0	1	1.0	1	5.0	88	335.8	74	405.6	12	27.0			16	43.2	30	86.0	230	960.6
Allendale County	3	8.4	1	0.5	1	0.1	13	58.4	4	44.3	1	1.0					1	0.2	24	112.9
Anderson County	1	3.0	1	6.0	1	4.0	17	75.0	16	41.4	6	19.3			4	16.0	6	16.2	52	180.9
Bamberg County					1	0.8	41	195.2	8	14.8	8	35.1			1	0.1	5	5.5	64	251.5
Barnwell County	2	236.0			2	4.0	34	80.3	22	59.0	4	27.2			4	3.1	9	23.6	77	433.2
Beaufort County			1	5.0	1	10.0	57	799.5	62	342.9	1	15.0	1	2.0	5	10.5	1	1.0	129	1,185.9
Berkeley County	5	71.1	2	2.5	1	2.0	189	903.7	233	2,080.7	13	34.9			20	25.3	24	135.5	487	3,255.6
Calhoun County	1	3.0			4	4.4	51	154.5	7	52.1	12	26.5			1	0.2	6	9.3	82	250.0
Charleston County	1	7.0					92	763.1	76	742.5	3	47.1			1	0.5	3	5.2	176	1,565.4
Cherokee County	1	5.0	4	89.0	2	10.5	11	31.0	4	6.3	1	3.0			6	23.5	10	51.5	39	219.8
Chester County	5	58.0					22	48.2	10	11.9	3	9.0	1	1.0	1	1.0	5	3.6	47	132.7
Chesterfield County	5	29.1			15	47.1	75	369.9	30	87.8	12	29.2	1	3.0	5	5.8	14	21.7	157	593.6
Clarendon County					2	8.0	124	722.6	97	675.9	7	61.0			2	10.0	3	6.6	235	1,484.1
Colleton County	4	218.1			1	0.1	198	912.5	71	310.5	24	88.7			5	10.0	10	24.4	313	1,564.3
Darlington County			1	3.0	1	1.0	84	239.4	58	374.0	10	66.0			2	29.0	5	106.5	161	818.9
Dillon County			2	4.6	3	8.5	54	125.9	30	95.7	9	9.2			4	13.5	6	15.5	108	272.9
Dorchester County					2	0.3	84	271.1	86	501.9	4	2.5			12	19.2	3	0.4	191	795.4
Edgefield County	1	5.0	1	2.0	3	0.6	10	20.9	9	60.4	2	0.4	1	2.0	3	7.0	7	8.5	37	106.8
Fairfield County	7	78.0	2	54.5	6	55.3	18	38.1	11	32.2	27	31.0	1	50.0	4	3.3	13	9.3	89	351.7
Florence County	1	2.0	1	7.0	4	13.0	138	820.4	187	1,448.9	17	97.3	2	0.6	14	18.9	11	15.7	375	2,423.8
Georgetown County	4	27.0	1	15.0			70	456.9	75	388.2	1	2.0					4	30.2	155	919.3
Greenville County	2	3.9	2	10.0	1	1.0	32	86.5	12	53.2					6	14.7	8	8.1	63	177.4
Greenwood County	1	0.1			7	13.4	33	113.5	5	17.5	2	4.5	1	0.3	7	4.0	9	3.3	65	156.6
Hampton County	6	14.9			1	1.0	66	119.4	55	485.7	6	11.6			8	9.9	3	0.7	145	643.2
Horry County	2	15.0			2	5.0	146	706.6	127	737.3	2	0.4	3	3.7	10	59.8	19	106.3	311	1,634.1
Jasper County					1	0.1	74	358.1	103	1,028.4	7	5.7			5	16.0	4	3.5	194	1,411.8
Kershaw County	5	103.6	1	2.0	10	28.0	65	209.4	7	70.7	12	157.3			14	29.8	14	52.5	128	653.3
Lancaster County	2	14.0	2	45.0	5	28.3	22	42.4	4	10.0	3	14.0			4	11.3	6	24.5	48	189.5
Laurens County	2	42.0	1	7.0	3	3.6	10	25.4	16	42.8	3	6.5	3	18.1	5	9.8	6	23.0	49	178.0
Lee County	1	0.1			4	9.5	85	948.3	53	464.0	3	6.5			1	0.5	20	164.6	167	1,593.5
Lexington County	4	6.5	1	3.5	12	15.1	112	224.9	18	38.8	21	15.6	2	0.3	69	67.9	27	21.9	266	394.5
Marion County	2	1.8			2	0.2	35	82.8	28	117.3	4	11.1	3	2.6	1	0.5	9	66.9	84	283.2
Marlboro County	1	0.1			2	10.7	41	190.2	61	232.9	13	72.3	2	5.2	4	3.8	6	10.0	130	525.2
McCormick County	1	2.0			1	0.3	8	2.8	6	7.4	4	1.6	6	7.1			16	48.2	42	69.4
Newberry County			1	2.0	1	1.0	20	35.9	8	11.6	3	1.8	4	16.9	1	1.0	21	162.5	59	232.7
Oconee County	2	35.0	2	1.3	1	0.1	35	89.2	11	12.1	2	1.2	2	8.5	3	1.2	18	17.2	76	165.8
Orangeburg County	1	1.6	3	26.5	26	64.9	181	980.1	64	312.4	25	64.6	1	22.0	25	66.5	18	58.0	344	1,596.6
Pickens County	2	11.5	4	166.5	4	14.7	34	41.2	10	14.9	1	0.5	1	0.5	5	5.0	18	33.4	79	288.2
Richland County	1	0.1			3	4.0	60	344.6	44	456.2	4	14.1	3	12.0	10	53.5	7	15.1	132	899.6
Saluda County	2	6.1			1	0.2	23	39.4	9	34.4	5	13.1			1	0.2	6	5.3	47	98.7
Spartanburg County	1	50.0	3	3.0	3	16.0	17	43.1	8	39.0	3	9.0	2	4.0	5	21.5	9	71.6	51	257.2
Sumter County	2	11.0	3	8.0	3	0.5	115	846.5	74	430.7	2	10.0	1	2.5	12	29.4	12	52.7	224	1,391.3
Union County	3	7.5	1	1.0	1	3.0	16	52.5	5	19.5	2	2.1			2	0.7	7	14.0	37	100.3
Williamsburg County	4	59.0	3	26.5	23	147.6	233	1,780.6	234	1,906.1	21	74.0	1	0.5	7	23.2	5	15.1	531	4,032.6
York County			1	5.5	1	2.0	25	91.0	11	33.6	14	28.5	2	6.0	5	4.5	13	40.4	72	211.5
<b>Grand Total</b>	<b>87</b>	<b>4,482.6</b>	<b>47</b>	<b>488.0</b>	<b>170</b>	<b>548.9</b>	<b>2,975</b>	<b>14,915.2</b>	<b>2,148</b>	<b>14,367.1</b>	<b>345</b>	<b>1,185.4</b>	<b>47</b>	<b>175.8</b>	<b>324</b>	<b>681.3</b>	<b>462</b>	<b>1,602.3</b>	<b>6,816</b>	<b>35,166.6</b>

**Total All Land Fires By County and Month, Fiscal Year 1999**

County	July		August		September		October		November		December		January		February		March		April		May		June		Total No.	Total Acres
	No.	Acres	No.	Acres	No.	Acres	No.	Acres	No.	Acres	No.	Acres	No.	Acres	No.	Acres	No.	Acres	No.	Acres	No.	Acres	No.	Acres		
Abbeville County	3	1.2	1	2.0	2	0.6	1	0.3	3	5.5	1	0	5	5.2	5	22.3	5	15.5	4	6.5	4	17.0	9	16.1	43	92.2
Aiken County	33	245.8	19	45.6	11	12.6	12	30.9	9	14.0	14	43.8	18	36.7	26	188.0	35	186.1	23	60.1	19	68.3	11	28.7	230	960.6
Allendale County	1	40.0	1	1.0	1	0.2					4	6.4	1	1.0	4	12.6	4	32.5	3	5.1			5	14.1	24	112.9
Anderson County	2	14.0	2	10.0	5	11.3	3	4.5	2	4.0			3	4.2	8	33.8	14	30.9	10	59.2			3	9	51	180.9
Bamberg County	8	40.8	3	0.5			6	10.6	2	4.0	6	28.2	4	13.0	11	78.4	12	46.2	6	26.1	1	0.1	5	3.6	64	251.5
Barnwell County	12	13.3	4	15.2	1	0.5	6	12.1	4	2.1	6	15.8	7	13.9	14	25.6	16	65.0	3	10.6	1	231.0	3	28.1	77	433.2
Beaufort County	1	3.0	1	0.5			6	24.5	9	28.6	18	68.2	10	21.3	21	156.5	42	727.7	16	127.6	2	16.0	3	12.0	129	1185.9
Berkeley County	22	38.7	6	7.4	4	3.2	17	47.1	59	206.5	53	213.2	39	258.7	90	741.4	123	1022	50	685.0	6	11.0	18	21.6	487	3255.6
Calhoun County	5	4.2	5	1.0	1	1.0	7	9.1	8	2.3	5	22.6	5	4.1	10	102.2	16	58.4	11	23.6	5	9.3	4	12.2	82	250.0
Charleston County	10	124.1	1	15.0	4	8.4	4	37.0	14	57.5	17	139.1	14	34.2	26	387.8	50	506.1	24	174.8	4	10.6	8	71.0	176	1565.4
Cherokee County	5	14.0	1	5.0	1	0.5	3	29.0	3	10.0	4	15.0			4	20.0	7	25.5	9	96.3	1	0.5	1	4.0	39	219.8
Chester County	3	12.2	5	43.2	3	11.0	1	7.0	5	4.7	1	0.1	1	3.0	1.0	1.0	4	5.1	7	13.0	10	16.9	6	15.5	47	132.7
Chesterfield County	12	25.2	4	1.3	4	8.1	11	32.7	6	28.7	10	29.6	15	79.0	22	68.6	29	145.4	32	148.7	4	17.2	8	9.1	157	593.6
Clarendon County	14	24.0	4	6.2	2	0.9	17	35.6	30	81.2	26	154.7	8	89.7	38	303.6	45	468.6	31	234.3	3	56.5	17	28.8	235	1484.1
Colleton County	12	33.7	2	1.1	4	15.3	10	26.2	26	59.2	32	116.2	33	226.0	63	237.5	79	477.7	33	313.3	6	9.2	13	48.9	313	1564.3
Darlington County	7	6.7	1	3.0	4	7.8	22	66.5	19	51	15	70.5	14	173.1	24	135.8	25	150.8	13	60.9	4	8.0	13	84.8	161	818.9
Dillon County	12	6.1	2	0.6	4	3.6	16	38.4	13	37.1	5	5.1	2	1.1	11	50.2	18	60.6	11	23.5	6	5.9	8	30.7	108	272.9
Dorchester County	13	120.4	8	10	3	3.5	5	7.5	18	41.0	30	81.0	13	25.1	28	119.3	38	251.1	19	110.2	6	12.5	10	13.8	191	795.4
Edgefield County	4	5.7	1	0.1	2	12.0	6	21.1	3	6.3					5	26.7	3	13.0	7	6.5	3	2.7	3	12.7	37	106.8
Fairfield County	11	107.9	12	43.6	1	0.1	4	9.3	2	2.0	1	0.1	5	6.5	9	11.7	15	83.7	8	57.2	6	5.7	15	23.9	89	351.7
Florence County	10	9.2	3	5.2	6	5.8	45	93.3	60	224.5	48	327.8	14	126.9	35	234.1	74	837.8	28	238.1	26	198.0	26	123.1	375	2423.8
Georgetown County	9	156.1	2	1.1	5	4.2	7	34.6	18	54.2	11	31.1	6	5.3	24	159.1	36	176.0	22	278.6	11	18.1	4	0.8	155	919.3
Greenville County	4	6.9	2	3.0	2	3.0	4	5.6	7	10.8	3	1.7	1	1.0	3	12.0	18	73.1	15	54.5	1	0.8	3	5.0	63	177.4
Greenwood County	9	3.8	5	4.2	2	0.8	4	9.0	3	16.0	6	6.4	2	10.1	4	5.3	13	54.8	8	10.0	4	2.7	5	33.5	65	156.6
Hampton County	8	4.9	5	3.4	2	0.8	4	13.1	9	6.1	12	30.7	14	13.2	22	61.8	40	459.9	19	31.5	2	3.0	8	14.8	145	643.2
Horry County	12	20.8	3	1.2	8	58.1	35	133.2	47	192.5	47	281.5	7	28.0	29	172.4	72	587.8	37	135.3	10	19.3	4	4.0	311	1634.1
Jasper County	5	2.6	1	2.0	2	3.1	1	0.1	11	39.0	13	50.8	14	49.2	42	418.2	74	566.6	21	199.2	8	55.0	2	26.0	194	1411.8
Kershaw County	8	113.0	4	1.7	4	2.5	8	16.5	8	19.5	6	10.7	11	22.9	18	158.6	14	98.2	20	132.3	14	39.0	15	38.4	128	653.3
Lancaster County	9	10.9			1	2.0					2	15.2	6	13.7	5	13.0	13	90.3	6	13.4	5	30.9	1	0.1	48	189.5
Laurens County	8	25.5	3	17.5	2	42.0	2	6.0	4	6.5	3	1.0	1	0.5	1	1.0	11	38.6	6	12.3	5	18.6	3	8.5	49	178.0
Lee County	10	24.2	5	12.6	2	4.0	9	19.5	9	38.4	7	129.5	13	226.0	29	260.6	33	518.9	29	275.2	3	8.4	18	76.2	167	1593.5
Lexington County	22	17.8	10	9.3	10	16.1	18	26.6	13	6.9	16	24.2	28	81.6	30	49.8	38	29.3	40	74.8	22	34.9	19	23.2	268	394.5
Marion County	8	58.6			7	37.6	8	20.2	11	20.5	6	27.8	5	12.0	6	9.2	19	76.5	11	12.2			3	8.6	84	283.2
Marlboro County	4	18.6	1	0.1	3	3.3	8	28.0	8	13.5	11	17.3	7	36.5	10	49.0	39	191.9	25	142.8	6	15.5	8	8.7	130	525.2
McCormick County	4	8.6	4	1.9	3	26.3	1	0.1			2	6.5	1	0.3	3	4.7	6	3.6	7	5.7	3	0.6	8	11.1	42	69.4
Newberry County	9	25.6	4	6.7	1	3.0	2	1.2			2	0.5	2	4.0	11	36.8	9	5.6	10	39.7	2	3.5	7	106.1	59	232.7
Oconee County	4	0.8	6	1.3	8	11.6	3	3.1	5	10.0	7	4.7	4	3.6	1	1.0	15	59.1	17	34.3	4	32.3	2	4.0	76	165.8
Orangeburg County	12	12.0	10	36.3	6	12.0	19	39.6	34	124.4	52	181.1	32	119.3	47	262.0	85	658.8	27	100.7	5	27.7	15	22.7	344	1596.6
Pickens County	7	18.7	5	4.7	8	11.3	5	8.1	4	20.0	2	3.0	2	0.7	5	8.2	27	192.1	9	8.4	5	12.5			79	288.2
Richland County	9	40.9	5	6.2	2	3.0	8	21.4	12	80.0	9	101.3	12	92.1	22	133.0	28	323.9	13	70.3	6	13.0	6	14.5	132	899.6
Saluda County	1	0.1	3	15			8	27.5	3	4.6	2	4.0	5	10.8	2	2.0	11	18.9	8	14.6	1	0.1	3	1.1	47	98.7
Spartanburg County	3	3.7	3	10.5	1	1.0	3	5.1	3	3.0	2	8.0	2	4.0	10	38.0	9	72.2	11	94.2	1	1.5	3	16.0	51	257.2
Sumter County	10	56.1	7	39.7	3	7.0	26	60.5	26	283.8	23	44.7	22	192.0	20	235.0	43	305.0	31	149.3	5	7.3	8	10.9	224	1391.3
Union County	5	11.0	5	24.0			1	0.1	2	2.0	1	1.0	4	4.0	2	5.5	7	29.0	5	20.0	3	3.0	2	0.7	37	100.3
Williamsburg County	16	118.1	7	13.6	12	75.3	68	376.6	65	353.0	84	425.0	33	219.4	74	461.6	96	1318	54	546.3	9	21.3	13	104.2	531	4032.6
York County	9	17.5	1	7.0	2	2.0	2	5.2	3	1.9	5	9.5	14	23.1	4	7.5	16	81.1	14	51.7	1	0.5	1	4.5	72	211.5
<b>Grand Total</b>	<b>406</b>	<b>1667.0</b>	<b>187</b>	<b>440.6</b>	<b>169</b>	<b>436.6</b>	<b>466</b>	<b>1404.0</b>	<b>600</b>	<b>2177</b>	<b>630</b>	<b>2766</b>	<b>469</b>	<b>2296</b>	<b>877</b>	<b>6622</b>	<b>1426</b>	<b>11239</b>	<b>813</b>	<b>4988</b>	<b>263</b>	<b>1066</b>	<b>350</b>	<b>1166</b>	<b>6616</b>	<b>35166.6</b>

## Law Enforcement Report, Fiscal Year 1999

County	Prosecutions				Investigations				Burn Site Inspections	State Forests	
	Outdoor Burning Violations	Fines	Woods Arson	Juvenile Cases	Total	Fire	Smoke	Timber Theft/Fraud	Cleared/ Prosecuted	Prosecutions	Fines
Abbeville	0	\$0.00	0	0	0	12	5	1	1	0	\$0.00
Aiken	5	\$575.00	0	3	8	20	4	3	5	0	\$0.00
Allendale	1	\$50.00	0	0	1	14	1	0	0	0	\$0.00
Anderson	0	\$0.00	11	0	11	11	16	0	0	0	\$0.00
Bamberg	8	\$600.00	0	0	8	12	0	2	2	1	\$0.00
Barnwell	15	\$780.00	0	0	15	52	2	0	0	14	\$0.00
Beaufort	4	\$400.00	0	0	4	68	2	0	0	9	\$0.00
Berkeley	56	\$6,935.00	8	0	64	359	4	2	2	47	\$0.00
Calhoun	10	\$1,555.00	0	0	10	59	8	1	1	12	\$0.00
Charleston	17	\$575.00	0	0	17	80	8	0	0	12	\$0.00
Cherokee	2	\$180.00	0	0	2	2	9	0	0	0	\$0.00
Chester	3	\$280.00	0	0	3	3	7	0	0	0	\$0.00
Chesterfield	33	\$1,977.00	1	0	34	0	3	0	0	35	\$0.00
Clarendon	6	\$525.00	0	0	6	0	3	2	1	5	\$0.00
Colleton	55	\$4,325.00	6	0	61	190	5	0	0	27	\$0.00
Darlington	4	\$175.00	0	0	4	0	4	0	0	9	\$0.00
Dillon	0	\$0.00	0	0	0	0	0	1	1	0	\$0.00
Dorchester	34	\$1,433.00	0	0	34	145	7	0	0	21	\$0.00
Edgefield	0	\$0.00	0	0	0	5	8	4	4	0	\$0.00
Fairfield	1	\$125.00	0	0	1	10	7	2	2	2	\$0.00
Florence	40	\$2,999.00	0	0	40	0	7	1	1	0	\$0.00
Georgetown	9	\$1,850.00	1	0	10	0	3	0	0	0	\$0.00
Greenville	2	\$0.00	13	0	15	22	9	1	1	0	\$0.00
Greenwood	0	\$0.00	0	0	0	0	15	0	0	0	\$0.00
Hampton	1	\$100.00	0	0	1	51	0	0	0	17	\$0.00
Horry	20	\$685.00	0	0	20	0	11	2	2	28	\$0.00
Jasper	10	\$1,375.00	0	0	10	42	4	0	0	5	\$0.00
Kershaw	42	\$4,840.00	0	0	42	0	4	6	5	23	\$0.00
Lancaster	0	\$0.00	0	0	0	0	1	0	0	4	\$0.00
Laurens	1	\$125.00	32	0	33	32	4	3	3	6	\$0.00
Lee	4	\$650.00	0	0	4	0	0	0	0	17	\$0.00
Lexington	43	\$6,135.00	0	34	77	150	64	3	2	17	\$0.00
Marion	1	\$75.00	0	0	1	0	0	0	0	0	\$0.00
Marlboro	10	\$545.00	1	0	11	0	1	1	1	2	\$0.00
McComick	0	\$0.00	0	0	0	13	8	2	2	0	\$0.00
Newberry	0	\$0.00	0	0	0	3	6	5	2	0	\$0.00
Oconee	5	\$800.00	1	0	6	37	6	2	2	4	\$0.00
Orangeburg	73	\$13,495.00	0	0	73	116	4	3	3	15	\$0.00
Pickens	10	\$875.00	10	0	20	34	16	0	0	3	\$0.00
Richland	6	\$575.00	0	11	17	75	11	2	2	0	\$0.00
Saluda	0	\$0.00	0	0	0	10	5	3	3	4	\$0.00
Spartanburg	0	\$0.00	0	0	0	4	16	6	6	4	\$0.00
Sumter	11	\$1,425.00	0	0	11	0	3	0	0	24	\$0.00
Union	0	\$0.00	0	0	0	4	9	0	0	0	\$0.00
Williamsburg	58	\$4,290.00	3	0	61	0	1	0	0	0	\$0.00
York	4	\$750.00	0	0	4	25	33	1	1	14	\$0.00
Manchester SF	0	\$0.00	0	0	0	0	0	0	0	13	\$1,800.00
Sand Hills SF	0	\$0.00	0	0	0	0	0	0	0	8	\$1,375.00
<b>Totals</b>	<b>604</b>	<b>\$62,029.00</b>	<b>87</b>	<b>48</b>	<b>739</b>	<b>1660</b>	<b>344</b>	<b>59</b>	<b>56</b>	<b>381</b>	<b>\$3,175.00</b>

Fifty-nine timber theft and related investigations cleared; timber value of \$372,740.

Timber theft cases pending court pleas or settlements valued at \$150,000.

Presented 8 Timber Theft Awareness and Prevention programs to landowners and forestry professionals.



## **INSECT AND DISEASE**

The Insect and Disease Section in cooperation with the State Division of Plant Industry and the U.S. Forest Service maintains a program to detect, evaluate, and suppress forest pests. Through cooperative agreements, these agencies make their technical assistance and advice available to the Forestry Commission.

The current forest pest detection and reporting system involves the reporting by field foresters of forest pests that are causing abnormal losses, require control action, or which may present new problems. Aerial surveys are made periodically for specific pests to determine occurrence and the need for suppression action.

### **MAJOR INSECT PROBLEMS**

#### **Southern Pine Beetle**

The southern pine beetle outbreak began in Horry and Georgetown counties in 1997 collapsed during 1998. These counties were dropped from outbreak status at that time.

In the Piedmont, a new outbreak began in September of 1998. Chester, York, Union, Edgefield, McCormick and Saluda counties were declared to be in outbreak status at that time. Only York was flown 100% due to timing factors related to the onset of fall coloration. The largest and most active spots were in western York County.

Losses to SPB during the fiscal year were well below the 20-year average of \$7.8 million per year. During the year, we mapped 2,438 active spots containing 195,409 trees. These trees contained a volume of 11,106 cords and 7,816,335 board feet. The green stumpage value lost to the beetles was \$3,320,036.

During the Spring, 28 counties were pheromone trapped to get an indication of anticipated beetle activity. Most counties had a prediction of "Declining - Low" beetle activity. Newberry County trapped the most beetles with the resulting prediction of a severe outbreak. Trapping in Cherokee, Chester and York yielded enough beetles for a prediction of "Increasing - High" beetle populations. Edgefield, Lancaster and Saluda fell in the next category of "Static - Moderate" increase. By the first of July, activity was beginning to pick up in those counties in which it was predicted. Surveys are planned for next fiscal year in those counties which had increasing prediction trends.

### **MAJOR DISEASE PROBLEMS**

#### **Oak Wilt**

Oak wilt disease has been identified in Aiken, Barnwell, Chesterfield, Kershaw, Lancaster, Lee, and Richland counties. Except for the recent discoveries in Aiken and Barnwell counties, the disease appears to be static and causing losses only to low-value oaks. Since there is potential for loss of valuable trees, including urban trees, periodic surveys are made to evaluate the spread.

#### **Dutch Elm Disease**

Dutch Elm disease has been confirmed in Aiken, Anderson, Cherokee, Chester, Chesterfield, Edgefield, Fairfield, Greenville, Greenwood, Kershaw, Lancaster, Laurens, Lexington, Marlboro, Newberry, Oconee, Pickens, Richland, Saluda, Spartanburg, and York counties. It is expected to gradually spread through the state because the primary agent of spread, the smaller European elm bark beetle, occurs statewide.

#### **Dogwood Anthracnose**

In 1988, a new anthracnose disease of dogwood was noted for the first time in South Carolina. This disease is caused by



the fungus Discula destructiva. Symptoms include foliage blighting, canker formation and progressive deterioration. Infected trees usually are killed by the fungus in 2-3 years. At this time, infected trees have been found in Anderson, Greenville, Laurens, Oconee, Pickens, and Spartanburg counties. As part of a southwide effort, the Forestry Commission has established 19 permanent plots in the counties known to harbor infections of the fungus. The dogwoods in those plots will be monitored periodically to determine the rate of spread of this potentially devastating disease.

## **MISCELLANEOUS INSECT AND DISEASE CHECKS**

Commission foresters made approximately 757 field checks of insect and disease problems and made recommendations for prevention and control. Other inquiries were handled by telephone, mail, and personal contact.

## **MYCORRHIZAL INOCULATION**

A project was continued at Creech Seed Orchard this year to inoculate containerized longleaf seedlings with the mycorrhizal fungus Pisolithus tinctorius (P.t.). Funding was not available to operationally inoculate the seedling crop for this year. However, approximately 80,000 seedlings were inoculated by I&D with sprayed spores. We have now done spore inoculations for 10 years and have had 100% success.

## **INSECT AND DISEASE LABORATORY**

During Fiscal Year 98-99 the Insect and Disease Laboratory processed 74 samples. These were submitted for analysis by Commission employees and private individuals. Recommendations for control of the pests that were identified were given where needed.

## **FOREST HEALTH**

The SCFC entered into an agreement with the USFS to evaluate permanent Forest Health plots throughout South Carolina. This was done by the Management Section and reported there. As another part of this program, the Forestry Commission also received additional funding for off-plot activity to survey for and report on other forest insects and diseases. A survey for hardwood defoliators performed during the Spring found no significant defoliator activity. However, hail damage was found on 47,656 acres in Aiken, Marlboro, Newberry and Saluda Counties. In the Sandhills counties and adjoining areas which do not usually have SPB problems, we surveyed this year for beaver damage and fire mortality. In these 18 counties, 13,195 acres were lost to beaver damage and 3,905 acres to fire.

Future surveys for defoliators and other forest pests will now be done using uniform guidelines and loss reporting.

## **ENVIRONMENTAL MANAGEMENT**

The Environmental Management Section is responsible for the development and implementation of South Carolina Forestry Commission programs that are related to the environmental protection of forest and associated natural resources. Issues that are addressed include the protection of water quality, site productivity, endangered species, and unique ecosystems.

### **BMP MANUAL**

*South Carolina's Best Management Practices for Forestry* was originally published in March 1994. Copies are distributed to loggers, landowners, and foresters at BMP educational programs and upon individual request. This year, the BMP manual was reprinted for the third time and *BMPs for Braided Streams: A Supplement to the 1994 BMP Manual* was published and distributed.

### **BMP IMPLEMENTATION MONITORING**

Compliance with harvesting BMPs has been documented in three previous surveys. Compliance for harvesting BMPs was 84.5% in 1990, 84.7% in 1991, and 89.5% in 1994. A new survey was initiated in the spring of 1997 to update BMP compliance. Compliance with harvesting BMPs in the 1997 survey improved to 91.5%. Two hundred sites were located and inspected throughout South Carolina by BMP Foresters. In the winter of 1998, site preparation BMPs were evaluated on the same 200 sites as the first part of a two-year monitoring study. A third and final site visit to each monitoring location was conducted in early 1999 to determine site preparation BMP compliance, regeneration methods, site stabilization, conversion to other uses, and other related factors. In the last site preparation monitoring survey, conducted in 1996, overall compliance was 86.4%. Overall compliance with site preparation BMPs in the 1999 survey rose to 98%. Data from the 1997, 1998, and 1999 site visits are currently being compiled for publication.

### **BMP EDUCATION/TRAINING PROGRAM**

BMP training and education are essential to the success of the Forestry Commission's non-regulatory BMP program. During this fiscal year, 42 BMP meetings were held across the state for forest landowner groups, government agencies, and professional organizations. A total of 1,342 people attended these meetings. Included in these meetings were four Timber Operations Professional (TOP) workshops and two TOP Road Construction workshops, which reached 159 loggers, landowners, foresters, and road construction contractors.

### **COURTESY EXAM PROGRAM**

The S.C. Forestry Commission's BMP Foresters, located in each of the three operating regions of South Carolina, offer courtesy BMP exams to landowners, foresters, and timber buyers. The BMP Forester makes site-specific BMP recommendations to follow while conducting forestry activities. During the 1998-99 fiscal year, the BMP Foresters completed 362 courtesy exams. Of the 362 sites, 358 (99%) were completed in compliance with our recommended guidelines.

### **ENDANGERED SPECIES**

This year, the Environmental Management Section continued training on endangered species biology and management, with an emphasis on those species that may impact forestry operations. The BMP Foresters are available to provide information and assistance to SCFC personnel, foresters, and private landowners. This assistance may include site visits, cooperating on the Safe Harbor program administered by the S.C. Department of Natural Resources, and assisting State Forests and other state-owned properties upon request. This year, the BMP foresters made 20 site visits to assist landowners and foresters with endangered species identification and information.

## MEMORANDUM OF UNDERSTANDING

In FY 97-98, the S.C. Forestry Commission signed a Memorandum of Understanding (MOU) with the S.C. Department of Natural Resources (SCDNR) to encourage cooperation between the two agencies with regard to BMP compliance. During FY 98-99, the BMP Foresters conducted five training sessions to familiarize over 220 SCDNR Wildlife Law Enforcement Officers with BMP guidelines.

## **DISPATCH AND FOREST TECHNOLOGY**

The Commission's Forest Fire Computer Aided Dispatch System (CADS) has been enhanced with computer hardware upgrades that provide four (4) times the processing power and ten (10) times the network speed at each dispatch center. This has greatly improved the mapping display performance of CADS and system reliability. Pee Dee and Coastal Dispatch centers were upgraded from three to five fully equipped dispatch consoles enabling each administrative area to be handled by one dispatcher during peak times. CADS workstations are also being installed in each Regional Office to enhance the monitoring of current fire situations.

The dispatch centers are also being upgraded to the most current map display and address matching data available for South Carolina. This will increase the accuracy and reduce the time required to locate burning notifications and wildfires. Large forest landowners' properties (i.e. US Forest Service, forest industry, etc.) are being added to the mapping system of CADS as it becomes available to the Commission.

Software enhancements and modifications to CADS; installation of a phone and radio recording system; and enhancements to the mapping application will be accomplished as funding becomes available. The Commission is also exploring a cooperative effort with the US Geological Survey on a Hazard Support System being developed to detect wildfires utilizing classified ballistic missile satellites, weather satellites, and other technology.

The Commission was a major cooperator in the 1999 National Aerial Photography Program, which acquired 1:40,000 color infrared aerial photography of South Carolina during January and February of 1999. The Commission is currently working with the Department of Natural Resources and other agencies to have this photography digitized so various computer applications and geographical information systems can more easily utilize it.

Eleven Global Positioning Systems (GPS) were purchased and placed into operation at the field level. These units will be utilized to measure and map forest management activities (i.e. reforestation, timber stand improvement, stand boundaries, etc.), wildfires, etc. These systems will supplement the traditional methods for acreage determination and mapping currently being used by field personnel.

Work continues on upgrading field computer software and operating systems to be Year 2000 Compliant (Y2K). Computers were installed at four (4) project foresters offices to assist in the preparation of forest management plans, correspondence to landowners, record keeping, etc. Mapping software and hardware for field foresters are being evaluated for ease of use, functionality, and compatibility with current computer hardware. Plans are to purchase mapping software and hardware in FY 2000.

## **EQUIPMENT**

The Equipment Section is responsible for development and implementation of statewide programs concerning use, design and maintenance of specialized forest fire control equipment.

This section is responsible for providing technical assistance and advice to repair shops, developing specifications for fire suppression equipment and motor vehicle fleet, and arranging training for all field mechanics.

All regular and specialized fire control equipment is modified and processed for field use at the Commission's Central Repair Shop. The Central Repair Shop personnel made numerous repairs to Forestry Commission vehicles and equipment and manufactured fire control equipment. The following list is some of the major accomplishments performed by the Central Repair Shop.

- Serviced and maintained vehicles assigned to Columbia Office/Shop Complex
- Provided maintenance assistance to the Region Repair Shops
- Processed new motor vehicle equipment
- Various truck and equipment parts from cannibalized equipment were issued to field shops
- Regions, State Forests, Taylor Nursery, Neiderhof Seed Orchard and Central Repair Shops maintenance facilities were certified by the State Fleet Management

### **EQUIPMENT PURCHASED**

#### **Coastal Region**

- Seven (7) International transports (Aiken, Beaufort, Berkeley (2), Colleton (2) and Jasper counties)
- Four (4) Chevrolet truck tractors (Hampton, Jasper and Orangeburg (2) counties)
- Five (5) custom tilt trailers (Jasper, Hampton, and Orangeburg (3) counties)
- Refurbished water handling equipment with equipment funds
- Refurbished 15 ton low-boy trailer (Hampton County)
- Refurbished burned 15 ton lowboy and truck tractor (Jasper County)

#### **Pee Dee Region**

- Twelve (12) International transports (Florence, Kershaw (2), Horry (2), Marlboro, Lancaster (2) Sumter, Williamsburg (2), Darlington) Counties
- One (1) 1999 Dodge ¾ ton extended cab truck 4X4 (Horry County) for Assistant County Ranger
- Refurbished water handling equipment with equipment funds

#### **Piedmont Region**

- Nine (9) International transports (Oconee, Spartanburg, Greenville, Pickens, Fairfield, Newberry (2), Chester, Union and Saluda)
- One (1) 1999 Ford Ranger pickup for BMP Forester
- One (1) 1999 Dodge ½ ton extended cab truck 4X4 for Regional Equipment Manager
- One (1) 1999 Dodge ¾ ton extended cab truck 4X4 (Lexington County) for Assistant County Ranger

#### **Manchester State Forest**

- Two (2) 1999 Dodge ¾ ton trucks 4 X4



## **Sand Hills State Forest**

- One (1) 1999 Chevrolet Blazer 4X4

## **Columbia Headquarters**

- Central Repair Shop along with field personnel initiated purchasing, fabrication, and organized the building of truck bodies for the new equipment.
- One (1) Chevrolet Blazer 4X4 for Forest Inventory Analysis Coordinator.
- Established Assistant Supervisor position at the Central Repair Shop.
- Initiated fuel credit card with Petroleum Source/State Fleet Management.
- Established and revised trip logs.
- Purchased parts to rework two (2) RM1000 Fesco lift plows.
- The Central Repair Shop prepared and organized the fire suppression equipment for one auction held at its headquarters in October of 1998. The Forestry Commission netted \$164,742.65 that was used to purchase like equipment.
- A balance of \$1,719.62 in the surplus equipment budget will be carried forward for FY 99-00.
- Revenue from the sale of scrap metal was \$220.00.
- Received 1.8 million dollars in recurring funds to purchase fire control equipment.

## **TRAINING FOR MECHANICS**

- Six (6) attended on heavy truck hydraulic course.
- Five (5) attended a commercial vehicle air brake workshop
- Nine (9) attended a basic electrical course.
- Fifteen (15) attended a heavy-duty brake class.
- Thirteen (13) attended a preventive maintenance workshop on Allison Transmission.
- Eight (8) attended an Allison World Transmission Electronic workshop.

# ADMINISTRATION

## Financial Statement

### REVENUES

State Appropriations 19,664,933

Federal Grants 2,233,153.00

### Earmarked Funds

Hunting & Fishing License 39,041

Refund of Prior Year Expenditure\* 99,241

Burning Assistance Fee 116,880

Fire Lane Fee 143,175

Timber Marking Fee 20,005

Training Conf - Registr Fee 3,116

User Fee - State Park & Forest 33,526

Miscellaneous Fee 8,580

Construction of Water Bar 10,875

Stand By for Prescribed Burning 9,495

Sale of Seedlings 969,098

Sale of Timber 1,246,995

Rent - Residence 12,652

Rent - Farm Land 20,852

Rent - State Owned Property 18,100

Rent - Equipment 10,639

Contributions & Donations 739

Insurance Claims 9,188

Sale of Services 41,640

Sale of Publications 24

Commission-Vending Machines 939

Sale of Junk 672

Forest Product Assessment 989,816

Sale of Assets 180,599

**Total Earmarked \$3,985,889**

**Total Revenue \$25,883,975**

### EXPENDITURES

Transferred to General Fund 37,907

State 18,921,615

Federal 2,089,967

Earmarked 3,892,325

**Total Expenditures \$24,941,814**

**EXCESS OF REVENUE O/(U) EXPENDIT \$942,161**

\*Funds refunded from Florida

## HUMAN RESOURCE MANAGEMENT

The Human Resource Management Section administers the following programs for the SCFC:

- Coordination of Total Quality Management efforts: 8 employees attended the Fundamentals of 4<sup>th</sup> Generation Management Training; 3 employees attended Tools and Techniques for Teams Training; 1 employee attended Change Management Training, 8 key managers attended a Performance Measurement Workshop. An Accounts Payable Process Improvement Team was established in the Pee Dee Region.
- Employee Relations, to include Progressive Discipline, EPMS, and Grievances and Appeals
- Classification and Compensation: 17 Performance Pay Increases, 3 Bonuses, 2 Retention Increases, 8 Promotions, 3 Additional Skills/Knowledge Increases, 29 Reclassifications, 22 Additional Duties/Responsibilities Increases, 38 New Hires, 25 Resignations.
- Job Announcement Postings
- Recruitment: 43 interviews conducted at N.C. State, Clemson, University of Georgia, and Virginia Tech.
- Employee Benefits, to include Health, Dental, Life, and Long Term Disability Insurance, Employee Wellness, Employee Innovation System, and Tuition Assistance
- Leave, to include Annual, Sick, Leave Without Pay, Family Medical Leave Act, Leave Transfer Program
- Affirmative Action
- Workers' Compensation: 39 claims filed.
- Service Awards: 54 State Certificates & Pins awarded, 84 SCFC Certificates awarded.
- Retirement, to include counseling and assistance with the process for both service and disability applications: 3 Disability Retirements, 17 Service Retirements.
- Personnel Records and Files Maintenance
- Commercial Drivers' License Drug & Alcohol Testing
- Overtime and Fair Labor Standards Act
- Reduction in Force
- Americans with Disabilities Act

## SAFETY

### Statewide

The Forestry Commission continues to have one of the lowest Workers Compensation premium rates in state government.

The Motor Vehicle Accident Review Procedure (2803) was revised and accident packets distributed for all vehicles.

A Safety Award was presented to Taylor Nursery along with a personal letter to each employee from the State Forester. Wrist watches and letters of commendation were presented to the Pee Dee Safety Committee members for their leadership.

The Headquarters Safety Committee was reorganized to represent Headquarters, Administration and Field Operations Support. The committee met quarterly. Members are Andy Boone/Insect & Disease, Mike Heath/Law Enforcement, Russell Hubright/Harbison & I&E, Charlie Hall/Central Repair Shop, Jimmy Lisenby/Nurseries & Tree Improvement, Chet Foyle/State Forests, and Rhett Bickley.

Weekly articles were prepared for the agency's in-house newsletter.

Fire resistant clothing was issued to all firefighters. A chart indicating appropriate fire clothing has been prepared and will be added to the Commission's Policy.

Units continue to review office environments for security, workplace safety, and emergencies. Regions are

investigating the feasibility of overhead strobe lights and interior dome lights on tractors.

Safety Officers work with the Training Director to provide and document personnel safety training. Safety Officers attended the annual SCOSC meeting held at Myrtle Beach and participated in other safety training activities during the year.

### **Coastal Region**

The Coastal Region made a conscious effort to do an even better safety job this year. Specific accomplishments include fire-line safety and checks for individuals wearing personal protective equipment (PPE). A second set of Nomex was issued to region personnel. A supply of water and Gatorade are on hand for emergencies. Forty-eight quart coolers have been issued to rangers and ranger technicians for firefighters and work details. The fire cache and first aid supplies have been reviewed and are to standards. Shop inspections have been conducted and fire extinguishers inspected.

### **Pee Dee Region**

All employees have been trained and re-certified in First Aid and CPR. First Report of Injury and OSHA 200 training have been held for all area secretaries. Safety Equipment inspections have been performed on all fire suppression units. Shop inspections were held at Florence and Kingstree and corrected all deficiencies. The Region continues to produce "Safety Zone" quarterly newsletter. Monthly and annual inspections of fire extinguishers were conducted.

### **Piedmont Region**

All employees have been trained and re-certified in First aid and CPR. Defensive Driver's training was held for drivers of agency equipment. First aid kits were upgraded and cross training conducted in equipment operation. Fire shelter and Incident Command training was held for the Region. Regular non-scheduled shop inspections were performed.

### **State Forests**

Manchester Shop inspection.

### **Nursery and Tree Improvement**

The following training was conducted: Adult CPR/First Aid; Biological Wastewater: Waterborne & Bloodborne Pathogens (NPDES Permit Compliance); Forklift & Defensive Drivers training; Combination CDL/Hazardous Material Endorsement; training in PPE & pesticide use; Fire extinguisher inspection/fire extinguisher demonstration. A safety audit was held at Taylor Nursery.

### **Headquarters/Harbison**

The Insect & Disease lab was monitored for allergens and pesticide residue by the Dept. of Labor Licensing & Regulations.

Harbison I&E staff received training in CPR/First Aid and chainsaw operation; routine awareness to include hot weather operations; retrofitting a 350 fire-tractor to meet Commission standards; reviewing demonstration sawmill and tower operations for employee and visitor safety.

Equipment & Central Repair Shop staff received training in attention to safety awareness, safe operations, and PPE. Bulletproof vests were purchased for all law enforcement officers. Instructors were certified for Preventing Disease Transmission/Bloodborne Pathogens. The Agency committed to Class 1 officer training, with first hires attending the full nine-week instruction at CJA.

Fire extinguishers serviced throughout headquarters complex.



## **ECONOMIC AND RURAL DEVELOPMENT**

Forest and wood product business development and recruiting as well as rural development assistance is a component of the Forestry Commission's mission. The goal is to maximize the benefits to the state from the forest resource base.

### **BUSINESS DEVELOPMENT**

3 business assists this year resulted in announced new investment of \$3.55 million and creation of 78 new jobs.

33 business recruiting contacts were maintained, with 15 contacts initiated this year.

14 existing business development assists were provided.

126 requests for technical information or industry directories were processed.

Business promotion activities included a South Carolina exhibit at the International Woodworking and Furniture Supply Fair '99 in Atlanta, GA; Carolina's Woodworking Show, Greensboro, NC; Interzum '99, Cologne, Germany; Engineered Wood Research Foundation, Hilton Head, SC; and the Forest Products Machinery and Equipment Expo '99, Atlanta, GA.

Trade promotion activities included generation of 366 trade leads at Interzum '99. In addition, visits were hosted for a European delegation (Germany & Austria) of wood products companies; the Minister of Forests and Environment from Rhineland Pfalz, Germany; and the trade office from Singapore.

### **RURAL DEVELOPMENT**

Rural development activities included sponsorship and participation in Governor's Rural Summit, participation in national Forest Products Conservation & Recycling (FPC&R) conference, two National Rural Development Partnership conferences, and continuing to serve as state co-chair of South Carolina Rural Development Council.

## **INTERNAL AUDIT**

The Internal Audit Department is an independent appraisal function that examines and evaluates the adequacy and effectiveness of Commission activities as a service to all levels of Management and the Commissioners. Emphasis is on auditing the agency's activities, processes, systems, and operations to ascertain efficiency in quality services.

During Fiscal Year 1998 - 1999 the Internal Audit Department assisted in the development of the South Carolina Forestry Commission's Annual Accountability Report for Fiscal Year 1997 - 1998. This Accountability Report details our efforts in serving our customers.

Other activities include: an audit of the Forest Renewal Program; a follow-up audit of the Taylor Nursery Petty Cash Account; a follow-up audit of the Creech Seed Orchard Petty Cash Account; an audit of the Sand Hills State Forest Cone Collection Account; an audit of the Niederhof Seed Orchard Petty Cash and Cone Collection Account; a follow-up audit of the Sand Hills State Forest Cone Collection Account; a follow-up audit of the Niederhof Seed Orchard Petty Cash and Cone Collection Account; an audit of the Pee Dee Region Petty Cash Account; a follow-up audit of the Forest Renewal Program; year-end physical inventories of stocked uniforms and shop supplies in all

relevant locations.

In addition, numerous memorandums were prepared and submitted to Management noting various issues that warranted attention.

The Internal Audit Department was also aware and involved where applicable in reviews performed by internal and/or external sources. For example, the Forest Management Section performed internal reviews in the Sumter and Walterboro Areas. External reviews were performed by State Fleet Management at Sand Hills State Forest and Manchester State Forest. The State Auditor's Office performed an audit of the agreed upon Procedures for Fiscal Year 1997 - 1998.

## **RECORDS MANAGEMENT**

The Internal Audit Department oversees the Records Management System for the Commission. The Internal Auditor serves as Records Officer. Twenty-nine Record Liaison Officers were selected based on the organizational structure of the Commission. The Records Officer is responsible for training the Record Liaison Officers. Such training is performed periodically to ensure consistency and continuity. In May 1999 the Records Officer led a formal training session on Records Management.

During Fiscal Year 1998 - 1999, a Records Management Policy and Procedure was prepared, approved, and distributed. A Records Management Manual was also developed and distributed to applicable personnel.

Our efforts in Records Management have been recognized by the South Carolina Department of Archives and History. The Commission received the Innovation Award for Using Total Quality Management to develop and implement an effective records management program. Rodger E. Stroup, Director of the South Carolina Department of Archives and History, presented this award to the Records Officer and State Forester on May 11, 1999.

## INFORMATION AND EDUCATION

The Information and Education Department includes Information Services, Environmental Education, and Harbison State Forest.

### INFORMATION SERVICES

Information Services produces audio-visual and print material for use by schools, Forestry Commission personnel, and the public in general for both educational and training purposes. The department handles public information about forest management subjects and maintains an Internet website. Information Services is also responsible for internal communication in the form of a quarterly, tabloid-sized newsletter and a weekly electronic news bulletin.

#### *Internet Website*

The Forestry Commission's website at <http://www.state.sc.us/forest> has been expanded and updated since we went online in 1997 to include comprehensive forestry information and information about the Commission's services. Categories for search include Fire/Outdoor Burning, Forest Recreation, Forest Management, Forest Products, SCFC Facts and Facilities, Environmental Education, Reference Resources, and Bulletin Board. Entire publications are available online, such as the *BMP Guidelines for Forestry Practices in SC* and its supplement on treatment of braided streams, SC's *Smoke Management Guidelines*, and the *Forest Fire Law Handbook*.

The website is a research tool for students of forestry. It is a reference for users of our services, with complete lists of county forestry personnel, outdoor burning information and relevant phone numbers, grant application information, seedling and services prices and ordering information, and location and trail maps for the state forests. It is a continually updated source for fire weather and current news. And it provides convenient links to related online resources. During fiscal 98-99 the site was visited 98,509 times.

#### *Exhibits*

- "Gifts of a Tree": Designed to illustrate the many commercial uses of wood and wood products as well as the environmental benefits of trees, one large floor exhibit was completed as well as three tabletop versions for region offices. The exhibit includes an interactive computer game for young children.
- Harbison State Forest: exhibit signage for Historic Tree Grove, Stewardship Trail, canoe landing
- Outdoor classroom exhibit – Ecosystem education
- Economic Development Council – "Find What You Need in the South"
- Portable forestry exhibit for State Museum
- Tabletop exhibit "Careers in Forestry", one for Columbia office use, four for field offices "History of Longleaf Pine on Sand Hills State Forest"
- Second Generation Tree Improvement

#### *Exhibit Venues*

- Information Services staff exhibited at the SC State Fair, the Wildlife Expo in Charleston, the SC Science Council convention in Greenville, and the SC Urban Forestry Conference in Myrtle Beach.

#### *Print*

**Best Management Practices Braided Streams Supplement**

**Smoke Management Guidelines – revision**

**Southern Pine Beetle Incident Maps - booklet**

**SC Forestry Commission Strategic Plan**

**Manchester State Forest Trail Guide**

**Manchester State Forest OHV Trail Guide**

**Harbison Trail Guide - revision**

**Tree Care - reprint**

### *Video*

- **What is a Forest?** – a 23-minute program for general audiences that explains forests and forestry from the most basic concepts through principles of forest management. It takes the viewer on a trip from the mountains to the sea to learn the composition of South Carolina's forests. It explains the difference between commonly misused terms like "old growth" and "virgin forest". And it examines some controversial forestry practices like prescribed burning and clearcut harvesting.
- **Preventive Maintenance for the Suppression Unit** – a 32-minute training program in basic maintenance of the tractor and transport for equipment operators.

### *CD-ROM*

- "Gifts of a Tree" – interactive video game for young children

### *Training*

- In cooperation with the Training Coordinator, several programs were completed to be used in monthly ranger/warden meetings: **Human Resources Refresher and A Video Sampler**
- A weeklong Effective Communications Course (training in planning a presentation) was conducted for professional personnel.
- Information Services staff served as program planners and seminar leaders at the annual national Association for Applied Interactive Media (AAIM) conference in Myrtle Beach, SC.

### *Furniture/Signs*

- Entrance signs for Harbison, Manchester, and Sand Hills State Forests, Taylor Nursery, and the Newberry Region Office
- Various bookcases and literature racks for field offices

### *Improvements*

- Harbison State Forest (HSF) Environmental Education Center maintenance including: molding, screen doors, installation of permanent exhibits from the SC State Museum
- Six outdoor exhibit displays for HSF trails and riverfront
- Two covered outdoor classrooms, HSF
- Two open outdoor classrooms, HSF

### *Publicity*

- 19 News Releases
- 1 Op. Ed. Article carried by 10 newspapers
- 17 media interviews, forest management subjects

## **ENVIRONMENTAL EDUCATION**

It is the responsibility of the Environmental Education Coordinator to plan, develop, support, and coordinate the Forestry Commission's environmental education effort. The Coordinator oversees the development of Harbison State Forest's Environmental Education Center and serves as State Coordinator of Project Learning Tree (PLT) which is an international environmental education program designed for students in pre-kindergarten through high school. Last fiscal year SC PLT conducted 44 educator workshops throughout the state to train 891 teachers, and two facilitator workshops or reunions that trained 33 facilitators. PLT provided 8 exhibits and/or presentations at various functions across the state, reaching approximately 2300 participants. The Coordinator also represents the Commission on the Coalition for Natural Resource Education and various other committees involved with environmental education throughout the state.

The Assistant Environmental Education Coordinator was instrumental in assisting the training and conducting of this



year's state Envirothon competition. The Envirothon is a program to help high school students learn more about our natural environment. The Envirothon tests students' knowledge of such topics as soils, water resources, forestry, wildlife, and current issues. The Assistant Coordinator matched Commission employees with high school teams in their areas, conducted training sessions for teachers, and coordinated the forestry portion of the competition and test. The Assistant Coordinator is also organizing the Wood Magic Forest Fair for October 1999 which will involve 700 to 800 students and teachers.

The Forestry Commission is instrumental in organizing the SC Teachers' Tour Coalition, an association of forest industry representatives and state and federal agencies, which conducted the SC Teachers' Tour in the Columbia-Sumter area in June. This successful tour provided 34 teachers with a first-hand experience of the forest industry and forest management, and provided them with training, resources and information to conduct lessons dealing with sustainable forestry.

The Forestry Commission continues to be a strong supporter of the Coalition for Natural Resources' environmental education efforts throughout the state. Sixteen foresters are trained to help conduct Teaching KATE (Kids About The Environment) environmental education lessons in forestry at Camp Long in Aiken County and Camp Cooper in Clarendon County.

### **Harbison Environmental Education Forest**

Harbison Environmental Education Forest, located within the city limits of Columbia, contains 2,177 acres. The tract is being managed as a public greenspace to emphasize environmental and forestry education, demonstrate forest management practices, and serve as a forest recreational area. The forest is open seven days a week, with estimated annual attendance of 75,000 – 80,000.

Harbison's education staff and other SCFC employees conducted a total of 70 programs serving 4463 participants. Fifty-six programs were conducted at Harbison for 2312 participants, and 14 programs were conducted elsewhere, for 2151 participant.

Harbison continues to offer support to the Scouting community. Thirteen Cub Scout programs, two Girl Scout programs, and two Boy Scout forestry merit badge programs were held at Harbison. Approximately 321 scouts and their leaders participated in these programs. Scouts use the facilities on the Forest for camping and other activities. They also give back to the Forest — six Eagle Scout projects were conducted this year. Scouts built one trail bridge and one 40-foot boardwalk. They installed four trail benches, planted 1,500 seedlings, and constructed and installed three firewood shelters as they worked to fulfill Eagle Scout requirements. The Assistant Environmental Education Coordinator worked with an Eagle Scout group to meet the requirements for the Hornaday Silver Medal.

The Harbison Environmental Education center is a 5000 square foot log building containing three offices, a small conference room, a screened porch, a deck and a 100-seat conference room. The Center is offered free to groups or agencies conducting environmental education workshops or classes. Twenty such meetings were held at the Center free of charge and the Forestry Commission used the facility for 47 meetings. Ninety-six other groups used the facility for a fee. A total of 166 meetings were held in the Environmental Center with 5106 participants. This activity generated an income of \$14,175.

Harbison State Forest contains over 15 miles of roads and trails for bicycling, hiking, jogging, and nature study. A permit system for recreational users requires bicyclists to pay a user's fee and promotes donations from other users. Harbison sold 921 bike permits for an income of \$10,510 and received \$718 in donations. The Gazebo and Eagle Shelter were used frequently by school groups and other visitors. Fifty-one groups used these facilities, with 4046 total attendees. Among these were 28 paying groups, which generated an income of \$810, and 55 educational groups that were not charged a fee.

Access to the Broad River is now possible due to a canoe landing on Middle Creek. Harbison staff cooperated with the River Alliance, utilizing funds from Richland County, to construct a 2100-foot access road and a step-down canoe landing. Since its completion 75 float plans have been filed for approximately 256 participants. The Forestry

Commission is also cooperating with DNR law enforcement personnel and the Columbia Fire Department to facilitate public rescues. One such rescue of paddlers in a capsized canoe was carried out by DNR and fire department personnel in fiscal 98-99.

A handicapped accessible trail along the Historic Tree Grove, and a handicapped accessible restroom at the Eagle parking lot/Historic Tree Grove entrance was built with a grant obtained from SC PRT. Included in this project were the building of a new connecting trail from the West Firebreak Trail to the Stewardship Trail and the development of interpretive signage explaining forestry practices along the Stewardship Trail. Volunteers from the Boy Scouts, local biking groups, and Harbison employees worked to complete these projects by October 1998.

A working sawmill and a steam loader were donated to Harbison and are currently being installed on the grounds surrounding the Environmental Education center. These structures, along with a short fire tower and outdoor classrooms will complement the educational facilities and mission of the Center.

### **Forest Management**

Two timber sales were conducted on Harbison State Forest. Both were negotiated sales, one removing 33.39 cords of pine at \$50 per cord for a total of \$1670.50 from a safety zone near the headquarters radio tower. The other sale was the removal of trees along the canoe landing right-of-way, as well as the removal of scattered trees in a former SPB spot. This sale involved 10 cords of hardwood at \$15 per cord, for a total of \$150. It also included 22.3 cords of pine at \$50 per cord, for a total of \$1115, bringing the total amount received for this sale to \$1265.

Twenty-three percent of receipts from forest product sales and user fees are paid to Richland County for use by Richland/Lexington school systems. This year the county received \$3,721.

### **Statewide Information and Education Activities**

Exhibits	79
News releases/articles	125
Interviews:	
Television	159
Newspaper	184
Radio	65
Parades	74

Forestry Commission personnel in Region and Area offices participated in approximately 856 educational programs attended by some 44,113 people.

# South Carolina Forestry Commission

## Organizational Chart

